A FLORISTIC SURVEY OF VASCULAR PLANTS OVER PARTS OF NORTHEASTERN NEW MEXICO

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ABSTRACT

A floristic survey was completed in northeastern New Mexico, including all of Harding, Mora, and San Miguel counties, most of Colfax County, and Quay County north of Interstate 40. Prior to this study the approximately 41,000 km² (ca. 15,800 mi²) study area, much of which is private land, had not been systemically surveyed for its plant diversity. A total of 9,619 specimens were collected during 2004 and 2005, which included 93 families, 437 genera, 911 species, and 956 taxa. *Rorippa teres*, *Chenopodium berlandieri* var. *berlandieri*, *Artemisia ludoviciana* var. *incompta*, *Tetraneuris torreyana* and *Rosa x harisonii* (escaped from cultilvation) were confirmed as state records. Approximately 9.3% of the flora (89 taxa) was non-native, including 11 species listed as "noxious" by the state of New Mexico. The collection methods, an overview of climate and geology, and discussion of vegetation types are included. The annotated checklist includes scientific names and authorities, total number of collections, counties represented with one voucher per county cited, habitat types, and elevational range for each taxon. Species accumulation curves for the five most frequently collected habitats suggest strongly that additional taxa will be found in each habitat. A Sørenson index was used to calculate floristic similarity of the Kiowa National Grasslands in New Mexico (within the study area) with that of the Pawnee and Comanche National Grasslands in Colorado. The first analysis, which included all plant taxa, indicated that the grasslands separated by the greatest distance had the least similarity. The second analysis, which excluded non-native taxa, increased the similarity values, which suggested that many exotic taxa are not shared between the three Grasslands.

RESUMEN

Un estudio florístico de las plantas vasculares que ocurren en el noreste de Nuevo México fue llevado a cabo en los condados de Colfax, Harding, Mora, Quay (al norte), y San Miguel durante las épocas de crecimiento en 2004 y 2005. Antes de este estudio esta área de 41,000 km² (15,000 mi²) que es principalmente terreno privado, jamás había sido investigada en detalle para estimar la diversidad existente de las plantas vasculares. De las 9,619 muestras botánicas coleccionadas durante los dos años del estudio, se identificaron 93 familias, 437 géneros, 911 especies y 956 taxa. También el total se encontraron 89 plantas exóticas (no nativas), lo cual es aproximadamente 9.3% de la flora total. De estas colecciones se reportan *Rorippa teres*, *Chenopodium berlandieri* var. *berlandieri*, *Artemisia ludoviciana* var. *incompta*, *Tetraneuris torreyana*, y *Rosa* × *harisnoii* por primera vez para el estado de Nuevo México. Entre las plantas exóticas había 11 especies designadas para el estado de Nuevo México como malezas dañinas. Están incluidos los métodos del campo y datos del clima, geología, suelos y vegetación. Las cifras más detalladas de estas colecciones, con los números de colección, nombres científicos, autorías y los hábitats están incluidas. En los análisis de los datos se hicieron gráficas para cinco hábitats con el número de las especies identificadas en relación a las áreas estudiadas. Estas gráficas sugieren que todavía existen especies de plantas no colectadas en cada área. Se hicieron dos análisis del índice de Sørenson (un índice de semejanza) entre la diversidad de plantas en la Pradera Nacional del Kiowa en Nuevo México con las diversidades de plantas que ocurren en las praderas nacionales del Pawnee y del Comanche en Colorado. El primer análisis incluyó tanto las plantas nativas como las plantas exóticas de cada región. Como resultado, que cuanto más lejos un área fue ubicada de otra área, más bajo fue el índice de semejanza. El segundo análisis incluyó solamente las plantas nativas y con este análisis los índices de semejanza aumentaron. Este aumento del los índices de semejanza sugirió que hay plantas exóticas que ocurren en alguna, pero no en todas de las praderas estudiadas.

INTRODUCTION

The Rocky Mountains in the United States have been the site of over forty intensive floristic survey dating back to the early 1980s (e.g., Nelson 1984; Marriot 1985; Kastning 1990; Hartman 1992; Snow 1994–95; Hartman & Nelson 1998; Elliot 2000; Holt 2002; Reif 2006). Data from floristics projects are critical for determining emergent properties of taxa, such as assessing which are endangered or threatened, and habitat

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data provide important insights about how best to protect such species (Ertter 2000). Floristic studies also faciliate the tracking of vegetative change through time (Stein & Davis 2000), which is increasingly valuable given the extensive urbanization, overgrazing, and natural disasters (fire, flooding, diseases of forests) that have significantly changed much of the American landscape. Only floristics data can track the historical spread and relative abundance of non-native taxa, many of which are decreasing the commercial and private value of many lands (D'Antonio & Meyerson 2002). In addition, distributional data from floristic surveys can guide the restoration of degraded landscapes using native taxa (Stein & Davis 2000). Plant surveys may even be used in regional land planning (Neely et al. 2006) even though many counties in the United States have species lists that greatly underestimate the true number of plant taxa from those areas (Moerman & Estabrook 2006; Norris et al. 2001).

Comparing present and past plant distributions also allows biologists to evaluate the effects of long-term ecological changes. For example, the Floristic Quality Index (Northern Great Plains Floristic Quality Assessment Panel 2001) gives each plant species from a given area a value from 0 to 10 based on its ecological importance (Andreas et al. 2004). When plants from a specified area are viewed cumulatively, a value can be calculated that helps determine how the area should be ranked in terms of regional conservation priorities. As average global temperatures continue to increase and geographical distributions of species shift, floristic studies can be used to make informed decisions about the conservation of particular species.

Floristic surveys are particularly valuable because they summarize distributional data at relatively localized scales. An incomplete (and thus erroneous) knowledge of the distribution of a species can cause problems in the listing of plants as threatened or endangered in two ways. First, a species may be considered endangered erroneously due to limited knowledge of its true distribution and abundance. Expensive protective policies could be enacted unnecessarily due to formal listing on Endangered or Threatened lists, as well as causing unnecessary litigation (Ertter 2000). Second, a lack of (or limited) knowledge of taxonomic diversity, as for example how morphologically similar species are distinguished and how their distributions differ, may exclude taxa that need genuinely need protection (Ertter 2000). Given the large number of newly described plant taxa from North America over the past three decades, including many from New Mexico (Hartman & Nelson 1998), additional survey work is imperative if we expect to provide maximal protection for genuinely rare and threatened taxa.

The most important results of floristic studies, however, are the discovery of plant taxa new to science during intesive (Hartman & Kirpatrick 1986; Wilken & Hartman 1991; O'Kane & Reveal 2006) or routine collecting (Reveal 2002; Holmgren & Holmgren 2002). In light of such discoveries and the fact that large parts of North America (especially Canada and Alaska) have low collecting densities, the need for additional floristics work is clearly warranted in many areas.

New Mexico is one of the least explored states botanically in the United States, with perhaps only Nevada being less intensively surveyed overall among the mainland western states. Prior to this study, which was carried out primarily by the first author (Schiebout 2006), the High Plains region of northeastern New Mexico had been inadqueately surveyed. Evidence in support of this observation came from records in the database at the University of New Mexico, Albuquerque (UNM), which in late 2003 had accessioned and databased fewer than 900 total specimens from Union, Colfax, Harding and Quay counties (T. Lowrey, UNM herbarium curator, pers. comm. 2003). Although that figure now exceeds 3250 specimens (exclusive of specimens from this project), it still reflects a relatively low collection density for this expansive area.

The goal of this study was to document the floristic diversity of vascular plants from a large part of the northeastern counties of New Mexico. Two priorities were among the objectives. The first was to collect extensively on private lands, given that private holdings (generally cattle ranches) are among the least-collected portions of the western United States. This priority was deemed important becase most of the study area is privately held ranchland and because most ranches have one or more wetland areas that harbor plant taxa unique to those habitats. The second objective was to focus on aquatic and riparian habitats, which typically include taxa with narrow ecological distributions, and because aquatic and riparian habitats represent a small portion of the study area.

Boundaries of Study Area.—The study area is spread over a six-county area in northeastern New Mexico (Fig. 1) that we estimate encompasses approximately 41,000 km^2 (ca. 15,800 mi^2). It includes most of Colfax, Quay north of Interstate 40, and virtually all of Union, Harding, Mora, and San Miguel counties (Fig. 1). The survey area included elevations from 1100 to 2650 meters and focused mostly on the plains and foothills. The western boundary generally was the lower foothills of the Southern Rocky Mountains, although a few collections extended up to 2650 meters in Colfax County (Schiebout 2006; Table 2). A floristic study in progress that encompasses the headwaters and drainage of the Vermejo River and higher elevations of Colfax County and adjacent areas is in progress (B. Legler, pers. comm. 2008). The eastern boundary of the area was the Texas/Oklahoma border. The northern edge was the state of Colorado, whereas the southern boundary extended to approximately 35°15'N latitude (Fig. 1).

Geography and Geology.—The study area can be divided into three biogeographical regions: the high plains of New Mexico, encompassing the eastern half of the study area, the central plains of New Mexico, comprising the middle region of the study area, and the mountainous region occupying the western part of the study area (Dick-Peddie 1993). The high plains and the central plains together are part of the Southern Great Plains, whereas the mountainous region is on the east slope of the Sangre de Cristo Range of the southern Rocky Mountains (Chronic 1987).

Geologically, the study area is located east of the Rio Grande Rift. Moving east from the Rift towards Texas and Oklahoma, the landscape includes expansive plains, rolling hills, low bluffs and river valleys (Chronic 1987). Sedimentary rocks from the Permian and Miocene epochs are the most common in this area. Much of the surface region is covered with Permian limestone, part of the erosion-resistant San Andres limestone. Other common rocks in northeastern New Mexico include red Triassic sandstones and siltstones of the Chinle formation, and Dakota sandstone and Mancos shale formations from the Cretaceous period. Miocene-Pliocene gravel, part of the Ogallala formation, can also be found at the surface in many parts of northeastern New Mexico (Chronic 1987).

The study area contains relatively few prominent geological structures. However, faulting, folding, and some warping occur in the sedimentary layers. Much of the relief in the area was formed from the downcutting of the Canadian River and its tributaries. The Canadian River, which has its headwaters near Raton Pass in northern Colfax County, flows south through east-central New Mexico to the Conchas Reservoir in San Miguel County. Thereafter it flows east across the Texas Panhandle into Oklahoma. The river cuts a 300–400 meter deep gorge in Mills Canyon through the Tertiary and Mesozoic strata of the Las Vegas Plateau section of the Great Plains and the Canadian Escarpment (Wisniewski & Pazzaglia 2002), where the river divides Mora and Harding counties.

In the northern part of the study area, remnants of hundreds of small basaltic to nephelinitic volcanoes are found (U.S. Geologic Service 2006). Some of the more eroded volcanoes date to the Tertiary period, whereas the more recent ones are from the Pleistocene to Recent epochs (Chronic 1987). The newer volcanoes have experienced relatively little erosion. Volcanic activity of the more recent epochs left broad lava flows over large areas of northern Union and Colfax counties, some of which extend into southern Colorado.

Climate.—Climate varies relatively little throughout the study area. Annual precipitation ranges from 39.3–45.9 cm (Table 1). Precipitation increases slightly from southeast to northwest. This change is seen by comparing data from Cimmaron, Las Vegas, and Raton in the north to stations located in the eastern region, such as Conchas Dam and Clayton (Table 1).

The wettest months are July and August, when moisture from the Gulf of Mexico moves in a southeasterly circulation pattern (Rogash 2003). As the moisture-laden air ascends to higher elevations it condenses and falls as precipitation.

Temperatures likewise vary along a northwestern to southeastern gradient. The average annual maximum temperatures in the southeast average above 22.3°C, whereas annual maxima of 17.5–18.3°C occur in the northwest (Table 1). Elevation changes account for most of this variation, given the relatively small differences in latitude. In general, altitudes are highest in the northwest and lowest in the southeast. The

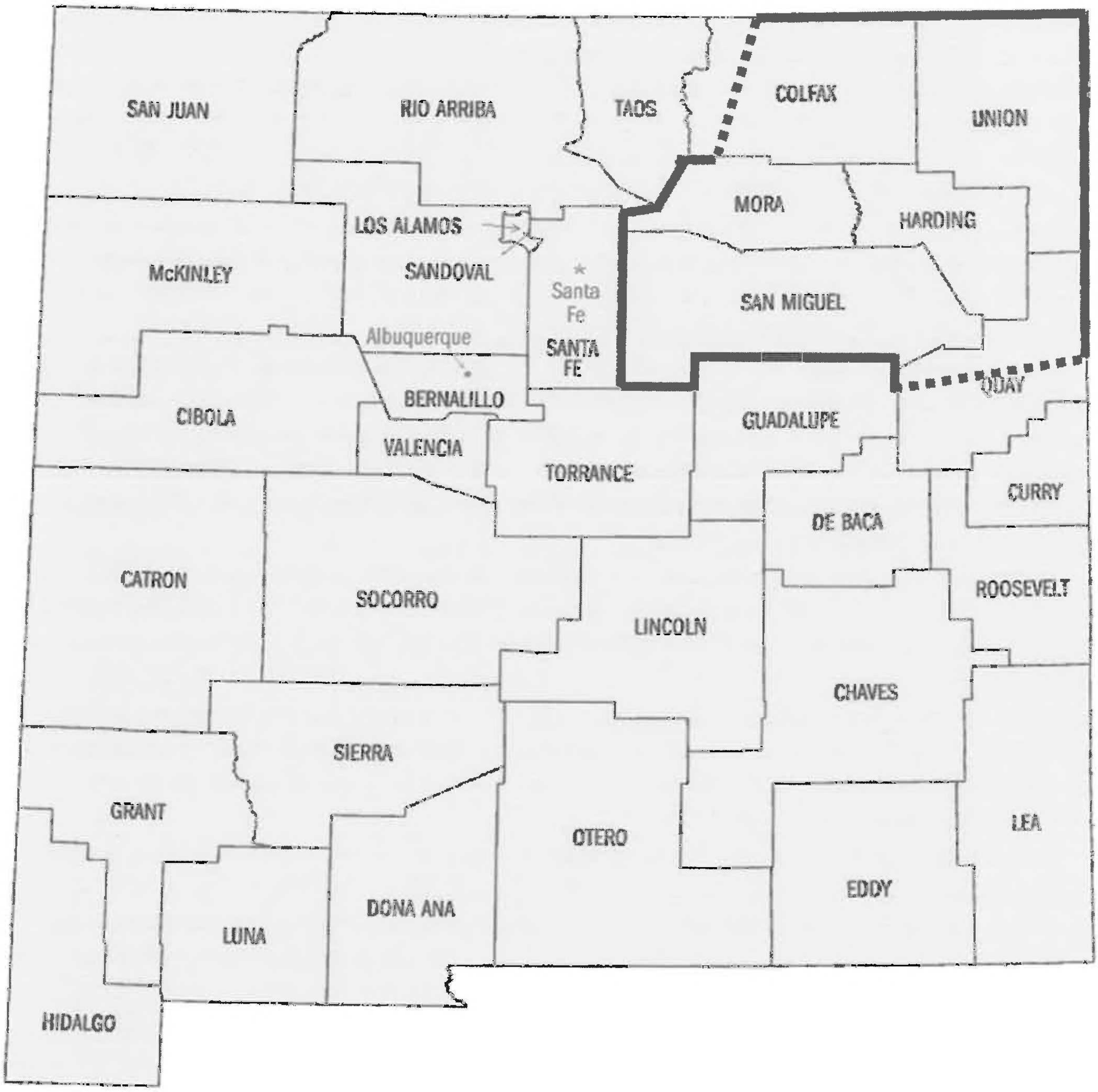

Fig. 1. Outline of study area in northeastern New Mexico. Dashed lines indicate portions of the area with imprecise boundaries.

TABLE 1. Climatic data from 10 weather stations in northeastern New Mexico (Western Regional Climate Center 2006).

Location (Altitude in meters)	Ave. Annual Max. Temp. (C) 1971–2000	Ave. Annual Min. Temp. (C) 1971–2000	Ave. Annual Total Precipitation (cm) 1971–2000
AMISTAD (1376)	21.4	4.2	39.9
BELL RANCH (1372)	22.7	4.3	39.3
CIMARRON (1891)	18.3	0.6	45.9
CLAYTON (1512)	19.4	4.1	40.1
CONCHAS DAM (1294)	22.9	6.8	39.4
DES MOINES (2018)	17.5	2.1	45.8
LAS VEGAS (2013)	18.2	2.0	42.9
MOSQUERO (1665)	19.8	3.3	41.9
SPRINGER (1979)	20.2	0.6	43.1
RATON (1806)	18.1	-0.2	44.3

warmest months are July and August, whereas the coldest temperatures occur from December through March.

Vegetation Classification.—The study area is located predominantly within the North American Prairie Province, with portions of the western region within the Rocky Mountain Province (e.g., Takhtajan 1986). Ecologists have classified the area in several ways. The Rocky Mountain Province is sub-classified into the Intermountain Valleys and Lower Mountain Slopes, which include the Pinyon-Juniper Woodlands (West & Young 2000) and the Southern Rocky Mountains (Peet 2000). The North American Prairie Province is sub-classified into a number of major grassland types. Shortgrass prairie dominates the study area (Sims and Risser 2000). Dick-Peddie (1993) described seven land cover classes located in northeastern New Mexico, including coniferous and mixed woodland, plains mesa grassland, montane grassland, montane scrub, urban or farmland, subalpine coniferous forest, and juniper savanna. The classification of Dick-Peddie (1993) was followed broadly, but some additional categories were added for this project. The broad categories used to summarize distributions herein are grasslands, coniferous woodlands, wetlands, disturbed areas, and miscellaneous. Broad categories are subdivided as evident in Table 2.

METHODS

Plant collections were made at 249 sites across the study area during the late spring and summer during the relatively wet years of 2004 and 2005. In light of the large amount of privately held land in the study area, mostly cattle ranches, a concerted effort was made to collect on private lands. Efforts were made to focus on wetland areas (broadly construed) on the private properties. Eighteen landowners granted permission to collect from their properties, which resulted in 3012 specimens, or nearly one third of the total collections. Microsoft Access was used to generate lists of taxa collected from each private property, which have been sent to each landowner in gratitude for their cooperation and assistance.

Colleting permits were secured for the Kiowa National Grassland (FS-2700-5), nine New Mexico state parks (SU-05-06-ALL-02), and the Maxwell and the Las Vegas National Wildlife Refuges (22580-05-LV03 and 2005–01, respectively).

The general collecting procedure essentially followed Hartman (1992). In brief, entire days were spent collecting plants in flower or fruit from selected sites. Since most of the study area was located on the high plains, where the number of roads is generally adequate and remote mountainous areas absent, collections could be made more rapidly than for similar projects with greater amounts of mountainous terrain and fewer roads. Specimens sometimes were pressed the day of collection, but usually were placed on ice overnight and pressed the next day. Pressed specimens were dried immediately on portable wooden driers using 100-watt bulbs for two to four days. Over 150 days were devoted to collecting and pressing over two seasons. The 249 total collection sites were chosen to reflect the diversity of topography, geology, habitat types, and other factors, as well as locations on public or private lands. Unlike the procedure discussed by Hartman (1992), no attempt was made to collect based on predetermined criteria regarding the ideal number of collection points per linear mile. The first set of specimens is deposited at the University of Northern Colorado (GREE), along with photocopies of field notebooks. The largest number of duplicates resides at the University of New Mexico (UNM), and another large set was deposited at the Rocky Mountain Herbaruim at the University of Wyoming (RM).

References used most frequently for making identifications included: Flora North America Editorial Committee (1993+), Great Plains Flora Association (1986), Martin & Hutchins (1980, 1981), Ivey (2003), Diggs et al. (1999), Harrington (1964), Weber & Wittman (2001), Isely (1998) and Cronquist et al.(1972–1997). Cox (2001) was used to assist with identifications of non-native taxa in New Mexico. The non-native noxious plants of New Mexico were identified using USDA PLANTS (United States Department of Agriculture, Natural Resources Conservation Service 2006).

The initial nomenclatural authority for this project was Snow & Brasher (2004), which has been replaced by Snow (2007) each of which was based largely on the APGII classification (APG 2003; see also Stevens

TABLE 2. Vegetation types recognized for northeastern New Mexico for this study, indicating the number of sites visted for each type, the number of taxa collected overall from each type and its percentage of the total number of taxa, and elevational range for each habitat type. Sites included obvious ecotones, indicated as hyphenated combinations of two types (e.g. Lacustrine-Plains mesa grassland).

Vegetation Type	Sites	Taxa	% of Total Taxa	Elevation (M)
Grasslands				
Plains-Mesa grassland	82	434	44	1150–2500
Plains Mesa grassland-Pinyon-juniper woodland	3	125	13	1350–1700
Plains-Mesa grassland-Riparian	20	353	36	1350–1600
Plains-Mesa grassland-Rocky slopes	3	76	8	1150–1400
Montane grassland	1	4	0.4	2600–2650
Montane grassland-Lacustrine	1	123	12	2250–2300
Montane grassland-Riparian	2	136	14	2350–2600
Foothills grassland	2	78	8	1850–2000
Foothills grassland-Artificial impoundments	1	61	6	2000–2050
Coniferous woodlands				
Pinyon-juniper woodland	8	181	18	1450–1950
Pinyon-juniper woodland-Oak woodland	2	13	1	1950–2050
Pinyon-juniper woodland-Mixed shrubland	1	8	1	1600–1700
Pinyon-juniper woodland-Ponderosa pine woodland	2	47	5	1750–1950
Pinyon-juniper woodland-Rocky Wash	1	25	3	1750–1800
Ponderosa pine woodland	6	177	18	1200–2350
Ponderosa pine woodland-Riparian	3	122	12	1800–2350
Mixed coniferous woodland	1	26	3	2400–2450
Mixed coniferous woodland-Riparian	2	104	11	2250–2300
Deciduous woodlands				
Riparian woodland	3	116	12	1350–1450
Riparian woodland-Rocky Wash	1	93	9	1550–1600
Oak wood land	3	168	17	1550–2100
Oak wood land-Riparian	2	90	9	2350–2400
Shrublands				
Mixed shrubland	8	222	22	1250–2000
Mixed shrubland-Lacustrine	1	35	4	1750–1800
Wetlands				
Riparian	19	471	48	1100–2500
Riparian-Rocky Wash	2	93	9	1350–1400
Lacustrine	5	140	14	1800–2450
Lacustrine-Plains mesa grassland	2	56	6	1800–1850
Palustrine	2	29	3	1300–1900
Disturbed				
Artificial impoundments	9	240	24	1150–2050
Roadside	48	392	40	1150–2500
Miscellaneous				
Badlands	1	9	1	1150–1200
Rocky Wash	1	42	4	1500–1550
Rocky Slope	1	45	5	1350–1400

2001). Specimens that did not key out easily or match herbarium specimens particularly well were marked with "aff." (affinities to). Species that may represent state records are prefixed with a number sign (#) in front of the taxonomic name.

Species accumulation curves were constructed for the five most frequently collected habitat types (plains mesa grassland, roadside, riparian, pinyon-juniper associates, plains mesa grassland-riparian) to assess the

thoroughness of the sampling regime. Sequential visits to a habitat type are recorded on the x-axis. The cumulative number of species collected in each habitat type is recorded on the y-axis.

RESULTS

Over 9,600 specimens were collected, which include the following personal collection numbers: M. Schiebout (*117-2278, 2295-3113* and *3135-9151*); N. Snow (*9279-9526, 9564-9936*), and approximately 55 miscellaneous collections of D. Hazlett. Relatively small outliers of the Carson National Forest and Santa Fe National Forest occurring in the study area were bypassed, given recent floristic work on the Carson National Forest by Jill Larson (unpublished) and the Santa Fe National Forest by Reif (2006).

Vegetation types

To better understand the distribution of individual taxa, the study area was partitioned into a number of vegetation types (Table 2) and a record was made for each taxon of the vegetation types in which it was collected. The vegetation types, although necessarily somewhat arbitrary and broadly defined, none the less are useful to land use managers, ecologists, and other workers. They are described in the following paragraphs, including some of the more commonly encountered taxa in many.

Grasslands.—Plains Mesa Grassland is the most abundant type of grassland in New Mexico (Dick-Peddie 1993). It encompasses about two thirds of the study area, extending from the eastern border of New Mexico west to the foothills of the southern Rocky Mountains. As with other grasslands of central North America, it has a large representation of taxa from Poaceae and Asteraceae. A total of 82 collecting sites were made from Plains Mesa grassland, which yielded 434 taxa (Table 2). Some of the taxa collected most commonly included: *Aristida purperea* var. *longiseta, Bouteloua curtipendula, Bouteloua dactyloides, Bouteloua gracilis, Cheatopappa ericoides, Chenopodium incanum, Chenopodium pratericola, Cirsium ochrocentrum, Elymus elymoides* var. *brevifolius, Engelmannia pinnatifida, Glandularia bipinnatifida* var. *bipinnatifida, Guara coccinea, Hymenopappus filifolius* var. *polycephalus, Machaeranthera tanacetifolia, Psoralidium tenuiflorum, Ratibida columnifera, Solanum elaeagnifolium, Solanum rostratum, Sphaeralcea coccinea* var. *coccinea, Tetraneuris scaposa* var. *scaposa, Thelesperma megapotamicum, Xanthisma spinulosum* and *Zinnia grandiflora*.

Montane grasslands were designated to include areas above 2,000 m elevation. This type of grassland was rare, restricted to the western part of the study area, and generally was associated with wetland habitats. Montane grasslands yielded 4 taxa (Table 2).

Foothills grasslands are located up to 2,000 m; samples were collected from these sites only twice for this study, yielding 78 taxa (Table 2).

Coniferous Woodlands.—Pinyon-juniper woodlands are dominated by *Pinus edulis* and either (or both) *Juniperus scopulorum* and *J. monosperma*. The most abundant herbaceous species were *Berlandiera lyrata, Bouteloua dactyloides, Chaetopappa ericoides, Elymus elymoides* var. *brevifolius, Glandularia bipinnatifida* var. *bipinnatifida, Melampodium leucanthum, Oenothera albicaulis, Tetraneuris scaposa* var. *scaposa* and *Vulpia octoflora*. The 8 collection sites from this habitat yielded 181 taxa (Table 2).

Ponderosa pine woodland is dominated by *Pinus ponderosa*. Other types of vegetation often grew with the pine, frequently including species of oak (Dick-Peddie 1993). The most abundant native species were *Erigeron flagellaris, Hymenopappus polycephalus, Juniperus scopulorum, Koeleria macrantha, Pinus edulis, Poa pratensis, Quercus gambelii* and *Rhus aromatica* var. *trilobata*. Three introduced species commonly encountered were *Cynoglossum officinale, Dactylis glomerata* and *Melilotus officinalis*. The 6 collection sites from this habitat were represented by 177 taxa (Table 2).

Mixed coniferous woodland is a mixture of coniferous species including *Abies, Picea, Pinus* and *Pseudosuga*. This vegetation type occurs in the western and northern parts of the study area at elevations above approximately 2400 m. The single collection visit yielded 26 taxa (Table 2).

Deciduous Woodland.—Riparian woodland occurs on floodplains adjacent to watercourses. Species of *Salix* and *Populus* species dominated this vegetation type. The 3 collection sites from riparian woodlands yielded 116 taxa (Table 2).

Oak woodland forest or shrubland is dominated by *Quercus gambelii*, *Q. grisea* and/or *Q.* x *undulata*. The 3 collection sites from this vegetation type included 168 taxa (Table 2).

Shrubland.—Mixed shrubland consists of shrubs (and sometimes low-growing trees) and included species of *Quercus*, *Cercocarpus*, *Rhus* and *Artemisia*. The most abundant species were *Artemisia ludoviciana*, *Berlandiera lyrata*, *Juniperus monosperma*, *Quercus grisea*, *Quercus x undulata*, *Rhus aromatica* var. *trilobata*, *Senecio flaccidus* var. *douglassii*, *Solanum elaeagnifolium*, *Thelesperma megapotamicum* and *Zinnia grandiflora*. The 8 collection sites in this habitat yielded 222 taxa (Table 2).

Wetlands.—Riparian vegetation occurs in areas with seasonally saturated soils, or in sand or rocks adjacent to normal watercourses. The most abundant species were *Bromus japonicus*, *Eleocharis palustris*, *Elymus smithii*, *Equisetum laevigatum*, *Erigeron divergens* var. *divergens*, *Melilotus albus*, *Poa pratensis*, *Rhus aromatica* var. *trilobata*, *Shoenoplectus pungens* and *Tragopogon dubius*. The 19 collections made in riparian habitats yielded 471 taxa (Table 2).

Lacustrine areas occur along the margins of natural ponds or lakes. The most abundant species collected from this vegetation type were *Astragalus bisulcatus* var. *bisulcatus*, *Convolvulus arvensis*, *Chaetopappa ericoides*, *Eleocharis palustris*, *Erigeron canus*, *Erigeron colomexicanus*, *Glandularia bipinnatifida* var. *bipinnatifida*, *Linum lewisii* var. *lewisii*, *Melilotus officinalis*, *Poa pratensis*, *Taraxacum officinale* and *Tragopogon dubius*. The five collection sites from lacustrine areas included 140 taxa (Table 2).

Palustrine areas included wet meadows, marshes, groundwater springs or other natural areas of standing water. Two collection sites in paulustrine areas resulted in 29 taxa (Table 2).

Disturbed Areas.—Artificial impoundments included the margins of artificial ponds and reservoirs such as Clayton Lake, Ute Lake and Conchas Lake. The most abundant species collected from these sites were *Aegilops cylindrica* var. *cylindrica*, *Berlandiera lyrata*, *Calylophus hartweggii* subsp. *pubescens*, *Cirsium undulatum*, *Elymus elymoides* var. *brevifolius*, *Gaura parviflora*, *Glandularia bipinnatifida* var. *bipinnatifida*, *Melampodium leucanthum*, *Melilotus officinalis*, *Tamarix ramosissima*, *Tragopogon dubius*, *Xanthisma spinulosum* and *Zinnia grandiflora*. The nine collections sites at artificial impoundments yielded 240 taxa (Table 2).

Roadside habitat was designated mainly for areas between paved roads and their disturbed shoulders and adjacent fencelines. The most abundant species were *Chaetopappa ericoides*, *Convolvulus arvensis*, *Elymus elymoides* var. *brevifolius*, *Elymus smithii*, *Gaura coccinea*, *Glandularia bipinnatifida* var. *bipinnatifida*, *Lappula occidentalis* var. *cupulata*, *Linum lewisii* var. *lewisii*, *Machaeranthera tanacetifolia*, *Melilotus officinalis*, *Ratibida columnifera*, *Sphaeralcea coccinea* var. *coccinea*, *Tetraneuris scaposa* var. *scaposa*, *Tragopogon dubius* and *Xanthisma spinulosum*. A total of 48 collection sites from roadside habitats yielded 392 taxa (Table 2).

Miscellaneous Areas.—Badlands are highly eroded areas that have nutrient-poor soils and support relatively little plant life. Only 1 site, surrounded by Plains-Mesa grassland, was clearly of this type; it yielded 9 taxa (Table 2).

Rocky washes consist of rocky drainages where water flows only briefly in plains or foothills. The sole rocky wash habitat site yielded 42 taxa (Table 2).

Rocky slopes, as defined here, are rocky areas where no single vegetation type dominates. The 1 collection site from this habitat type which occurred in plains-mesa grassland, yielded 45 taxa (Table 2).

Numerical Summary of Vascular Plant Taxa Collected.—Figures reported here are tentative, and readers will note instances where we indicate that the initial determinations may be incorrect and need further study. The time and resources were not available to update tentative, initial identifications.

This study documented 93 families, 437 genera, 911 species (including those of hybrid origin), and 45 infraspecific taxa, for a total of 956 taxa of vascular plants (Table 3). The most species-rich families were Asteraceae, Poaceae, and Fabaceae (Table 4), which together accounted for ca. 40% of the taxa collected. The diversity for Amaranthaceae is higher than typically reported regionally (Taylor 2000; Arnett 2002; Reif 2006) because we followed APGII by including Chenopodiaceae in Amaranthaceae. Likewise, Plantaginaceae now includes many genera formerly included in Scrophulariaceae, most notably the species-rich genus *Penstemon*. Finally, Boraginaceae now includes species formerly included in Hydrophyllaceae, although the number of borage taxa overall are only minimally enlarged by taxa formerly in Hydrophyllaceae.

TABLE 3. Summary of taxa collected by higher taxonomic ranks from northeastern New Mexico.

	Families	Genera	Species and nothospecies	Infraspecific	Total Taxa
Fern Allies	2	2	5	0	5
Ferns	3	5	9	1	10
Gymnosperms	3	6	10	0	10
Angiosperms	85	424	887	44	931
Total	93	437	911	45	956

TABLE 4. Plant families in northeastern New Mexico with the greatest number of taxa.

Family	Number of Taxa	Percentage of Total Taxa
Asteraceae	184	19.2
Poaceae	128	13.4
Fabaceae	71	7.4
Brassicaceae	37	3.9
Rosaceae	31	3.2
Plantaginaceae	28	2.9
Cyperaceae	27	2.8
Amaranthaceae	27	2.8
Boranigaceae	25	2.6
Ranunculaceae	25	2.6

TABLE 5. Plant genera with the greatest representation in northeastern New Mexico.

Genus	Number of Species	Number of Taxa
Astragalus	17	17
Carex	16	16
Penstemon	16	16
Asclepias	13	13
Potentilla	11	11
Juncus	11	11
Erigeron	11	12
Chenopodium	10	11
Dalea	10	12
Solidago	10	10
Artimisia	9	12
Oenothera	9	11

Twelve genera were represented by 10 or more taxa, including (in decreasing order of abundance) *Astragalus*, *Carex*, *Penstemon*, *Asclepias*, *Potentilla*, *Juncus*, *Erigeron*, *Chenopodium*, *Dalea*, *Solidago*, *Artemisia*, and *Oenothera* (Table 5). These genera compare similarly to similar studies from nearby areas to the north (Taylor 2000; Arnett 2002), although *Dalea* and *Oenothera* are somewhat less common in other floristic studies from the Southern Rocky Mountians. *Dalea* becomes a more common floristic element in the Chihuahuan Desert to the south, and some taxa in the genus appear to be near their northernmost range at higher elevations in the study area.

Some taxa common to abundant relatively nearby to the north in Colorado appeared to be much less common in the study area. For example, *Elaeagnus angustifolia*, which is a noxious weed in Colorado, was not commonly encountered in the study area. *Cirsium arvense*, another noxious weed common in Colorado and elsewhere, was found only in isolated patches of disturbed areas.

Five taxa are confirmed as state records for New Mexico: *Rorippa teres*, *Chenopodium berlandieri* var. *berlandieri*, *Artemisia ludoviciana* var. *incompta*, *Tetraneuris torreyana* and *Rosa x harisonii*. The lattermost is a horticultural taxon escaped from cultivation. Six possible state records for New Mexico are reported but these require additional confirmation. Although a number of significant range extensions were noted for some taxa considered to be noxious weeds (Schiebout 2006), this paper does not address range extensions.

DISCUSSION

This project survey represents the first extensive floristic summary of the plant diversity occurring in this part of northeastern New Mexico based on focused field work and documented vouchers. Some specimens were difficult to identify with a high level of confidence irrespective of which references were used. This was partially due to the project having been carried out in a smaller herbarium and frequently having limited

(or no) comparative material. *Mentzelia* and *Hymenopappus* include species that are not easily identified in this region given existing resources, nor did infraspecific key easily for *Heterotheca villosa*, *Aristida purpurea*, *Tetraneuris acaulis* and *Artemisia ludoviciana*.

No species listed as threatened or endangered were collected or observed during this study, which corroborates the perceived rarity of such taxa in the study region.

Approximately 275 taxa were collected only once, whereas approximately 115 were collected only twice. (Tentative figures are given because a few specimens remain indetermined). These numbers, along with the species accumulation curves (below), suggest strongly that further surveying is needed to fully document the plant taxa occurring in the area and in the various habitats. Additional collections from earlier in the flowering season (March and April) will likely yield additional records of native (e.g., *Leucocrinum montanum*, *Townsendia grandiflora*) and non-native (e.g., *Chorisora tenella, Ranunculus testiculatus*) specimens. Likewise, additional fieldwork in September and October likely would increase the number collections and diversity of taxa with late-summer flowering and fruiting schedules.

Species Accumulation Curves.—Species accumulation curves were analyzed for five habitat types to assess the thoroughness of the sampling regime (Fig. 2). The curves reflect the total number of taxa known from a habitat type as each habitat type site is visited sequentially. Species accumulation curves were calculated for plains mesa grassland, plains mesa grassland-riparian, riparian, pinyon juniper associates (including pinyon juniper woodland, pinyon juniper woodland oak woodland ecotone, pinyon juniper woodland mixed woodland ecotone, pinyon juniper woodland ponderosa pine woodland ecotone, pinyon juniper woodland rocky wash ecotone, plains mesa grassland and pinyon juniper woodland) and roadside collections.

A curve that leveled off towards the right as an increasing number of sites were collected within a habitat type would suggest that relatively few additional taxa would likely be recorded from a particular vegetation or habitat type with further collecting, and that the collecting regime was beginning to paint a fairly complete picture of diversity for a given habitat type. However, all of the curves reflected a steady upward trend when the study ended (Fig. 2). The rates of increase for plains mesa grassland and roadside areas were decidedly less than for the other three, which remained steep, and which suggest many more collections will be needed needed from these habitat types before the floristic diversity associated with each is well characterized. Although the curve associated with pinyon juniper associates flattened somewhat in its middle, the collection rate accelerated again in the latter collecting sites.

Table 6 reflects the average number of new taxa collected per site for five habitat types overall, during the first and second havles (respectively) of the total visitations to each habitat type. The two habitats with the greatest number of additional species per new site were the plains mesa grassland-riparian and riparian. In addition, the riparian habitat showed a greater increase in number of additional species per site visited for the second half of the collection episodes compared to the first half (Table 6). One probable partial explanation for this observation involves the late flowering periods of many Cyperaceae and Juncaceae, which are common in riparian areas. Another reason may be that relatively few habitats that generally support these families were visited during the first collection season. In general, all vegetation types indicated incomplete collecting (Fig. 2, Table 6). In particular, riparian vegetation appears to need the most additional attention for future collecting (Table 6).

Non-native and invasive taxa.—Non-native or invasive plant taxa were represented by 89 species, or approximately 9.3% of the taxa. The percentage of non-native taxa is presented for five of the most commonly encountered habitats (Table 7) shows that roadsides had the greatest percentage of non-natives at 11.7 percent. This result was expected given that roadsides are corridors for the spread of invasive plants. The figure of approximately 9.3% non-native taxa is slightly less than the figure of approximately 11% previously reported for New Mexico (Cox 2001), and compares similarly to other recent floristic studies from the southern Rocky Mountain area (Hazlett 2004; Arnett 2002). However, small towns and the disturbed habitats typically associated with them, such as vacant lots, were not targeted in this survey. Additional collecting in incorporated areas likely will yield additional records of non-native taxa.

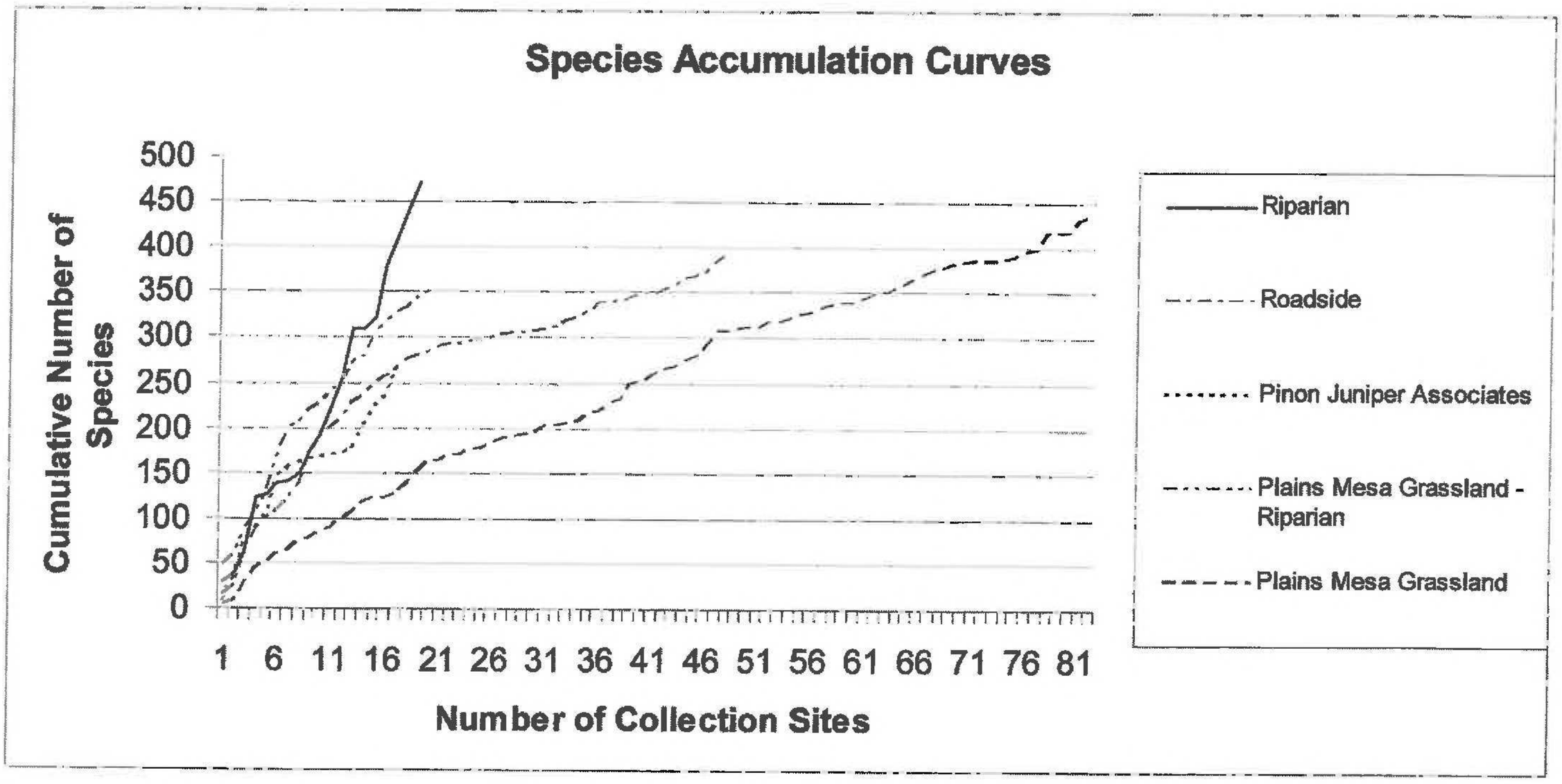

Fig. 2. Species accumulation curves for five of the most frequently collected habitat types.

Table 6. The average number of taxa collected for the first time during each successive visit for five habitat types. Total represents the number of taxa collected on average for the first time across all visits over two years. First Half represents the number taxa collected for the first time on average for the first half of the total number of visits; Second Half the same across the second half of all visits.

Habitat Type	Total	First Half	Second Half
Plains mesa grassland	5.3	6.3	4.3
Plains messa Grassland- Riparian	17.6	22.9	12.4
Pinyon juniper woodland- associates	15.5	20.2	11.2
Roadside	8.2	12.3	4.0
Riparian	24.8	19.1	29.9

Table 7. The percentage of non-native species collected across five habitat types.

Vegetation type	Collected Non-Native (%)
Plains Mesa Grassland	9.7
Pinyon Juniper Associates	9.9
Riparian	10.0
Roadside	11.7
Plains Mesa Grassland-Riparian	11.0

At the time of this study the State of New Mexico officially listed 35 taxa as invasive and noxious weeds (USDA 2006). Of these, 11 were collected in at least one county in the study area. Five were classified as Class C noxious plants: *Aegilops cylindrica, Convolvulus arvensis, Elaeagnus angustifolia, Tamarix ramosissima,* and *Ulmus pumila*. Class C species are widespread in New Mexico (DuBois 1999). Three were classified as Class B noxious plants: *Carduus nutans, Cirsium vulgare,* and *Conium maculatum*. Class B species are only located in certain portions of the state and should be treated as Class A plants in regions from which they are absent (DuBois 1999). Three were classified as Class A noxious plants: *Linaria dalmatica* subsp. *dalmatica, Cardaria draba,* and *Cirsium arvense*. Class A species are either absent from New Mexico or have a very limited distribution in the state (DuBois 1999).

Comparing the distribution of plants collected to the distribution maps located at the New Mexico State Weed Information Web Site (NMSU 2005), five species included new county records. The range of *Aegilops cylindrica* now includes Colfax, Mora and Union Counties; that of *Lepidium draba* and *Cirsium vulgare* now include Mora County; that of *Linaria dalmatica* subsp. *dalmatica* now includes Colfax County; and the range of *Ulmus pumila* now includes Mora County (Table 8).

Species of Special Concern.—Few plant taxa in northeastern New Mexico are federally listed as threatened or endangered. From the six county study area only 10 species are designated as rare by the New

Table 8. Declared noxious weeds collected from the study area, country distribution in study area, and New Mexico state weed status (New Mexico State University Weed Information 2005).

Scientific Name	County Distribution in Study Area	State Weed Status
Aegilops cylindrica	Colfax, Mora, San Miguel, Union	C
Carduus nutans	Colfax, Mora, , San Miguel	B
Cirsium arvense	Colfax	A
Cirsium vulgare	Colfax, Mora	B
Conium maculatum	Colfax	B
Convolvulus arvensis	Colfax, Harding, Mora, San Miguel, Union	C
Elaeagnus angustifolia	San Miguel, Quay	C
Lepidium draba	Mora, San Miguel, Union	B
Linaria dalmatica subsp. *dalmatica*	Colfax	A
Tamarix ramosissima	Colfax, Harding, Mora, San Miguel, Quay, Union	C
Ulmus pumila	Mora, San Migel, Union	C

Mexico Rare Plant Technical Council (1999; Tables 9 and 10). Of these, one collection was made of *Astragalus wittmannii*. Three other species were collected that are being monitored by the New Mexico Natural Heritage program include *Euphorbia strictior*, *Astragalus shortianus*, and *Penstemon auriberbis*.

Floristic Comparisons.—Taxa from the Kiowa National Grassland portion of this survey were compared to the published results of the Comanche (Hazlett 2004) and Pawnee National Grasslands (Hazlett 1998). The Pawnee is located in northeastern Colorado, whereas the Comanche Grassland is in southeastern Colorado. These locations were chosen for comparison because they are similar ecosystem types (shortgrass prairie) with similar elevations along a latitudinal gradient with nearly the same longitude. The Pawnee Grassland is located between 40°36' and 41°00' latitude. The Comanche Grassland is located between 37°00' and 38°00' latitude. The Kiowa Grassland is located between 35°45' and 36°45' latitude. A Sørensen's Similarity Index was used to determine floristic similarities between the three grasslands (Sørensen 1948).

Similarity between two areas is expressed by the quotient of similarity (qs), wherein (qs) = 2 (C) / A + B, where A = the number of species of sample A, B = the number of species of sample B, and C = the number of species common to both A and B (Barbour et al. 1987). This formula provides a measure of taxa in common between two areas, but does not account for relative abundance of species. The higher the value of qs, the greater the number of shared taxa between the two areas.

In addition to one analysis that included all taxa, a second analysis compared areas after the non-native taxa had been removed from the data. Including the second analysis is of considerable interest in light of current needs, particularly at the State level, to monitor and control the spread of noxious plant species. Evaluating the relative abundance of non-native plants in this manner may provide insights into the control of invasive species (Pysek et al. 2005).

The results indicate a clear latitudinal variation in species distributions (Table 11). The closer the locations are to each other the more taxa they share. For example, the relatively adjacent Pawnee and Kiowa have an Index of Similarity of 0.46, whereas that for the relatively distant Kiowa and Comanche is 0.62 (Table 11). The similarity of the Pawnee and Comanche is 0.51, a value intermediate between the Grasslands separated by the greatest distance (Table 11).

Given that many invasive species have extensive distributions in North America and that relatively few barriers exist to plant migration on the plains, similarity values that exclude non-native taxa may portray the floristic similarities more accurately exclusive of anthropogenic effects. For example, the inclusion of exotic species may artificially inflate the similarity between the Kiowa and Pawnee, since their exclusion leads to a lower similarity value (Table 12). However, irrespective of whether exotic species were included (Table 11) or excluded (Table 12), grasslands were always more similar to one another than those further apart (Kiowa with Pawnee).

An unexpected result was obtained for the Kiowa and Comanche Grasslands when exotic species were

TABLE 9. Plant species considered rare from counties in the study area. Only *Astragalus wittmannii* and *Grindelia acutifolia* were observed in the field (New Mexico Rare Pant Council 1999).

Taxa	County Distribution
Astragalus wittmannii	Colfax, Harding, Mora
Calochortus gunnisonii var. *perpulcher*	Colfax, Mora, San Miguel
Delphinium robustum	Colfax, Rio Arriba, Sandoval, Taos
Delphinium sapellonis	Bernalillo, Los Alamos, Mora, San Miguel, Sandoval, Santa Fe
Erigeron subglaber	San Miguel, Taos
Eriogonum aliquantum	Colfax
Grindelia acutifolia	Colfax
Hackelia hirsuta	Colfax, Mora, Rio Arriba, San Miguel, Santa Fe, Taos
Ipomopsis sancti-spiritus	San Miguel
Packera spellenbergii	Harding, Union
Salix arizonica	Mora, Rio Arriba, Taos

TABLE 10. Rankings of plant species considered rare from the study area by different state and federal organizations (New Mexico Rare Pant Council 1999).

Taxon	USFWS	State of NM	USFS	Natural Heritage NM	Global Rank
Astragalus wittmannii	SoC	SoC	Sen	S3	G3
Calochortus gunnisonii var. *perpulcher*	SoC	SoC	Sen	S4?	G5T4?
Delphinium robustum	SoC	SoC	Sen	S4?	G5T4?
Delphinium sapellonis	SoC	SoC	Sen	S?	G2?
Erigeron subglaber	SoC	SoC	Sen	S3	G3
Eriogonum aliquantum	SoC	SoC	.	S3	G3
Grindelia acutifolia	SoC	SoC	.	S2	G2
Hackelia hirsuta	SoC	SoC	.	S?	G4?
Ipomopsis sancti-spiritus	E	E	E	S1	G1
Packera spellenbergii	SoC	SoC	Sen	S2	G2?
Salix arizonica	SoC	SoC	Sen	S1	G2G3

TABLE 11. Sørensen's Floristic Similarity Index for three federal grasslands including all taxa collected from each site. Bold, underlined diagonal numbers are the number of taxa found on each of the grasslands. Bold numbers above the diagonal numbers are the number of taxa in common between the areas. Normal font numbers below the diagonal are Sørensen's Floristic Index of Similarity.

	Kiowa Grassland	Comanche Grassland	Pawnee Grassland
Kiowa Grassland	**448**	300	223
Comanche Grassland	0.62	**513**	263
Pawnee Grassland	0.46	0.51	**521**

TABLE 12. Sørensen's Floristic Similarity Index for three federal grasslands including only the native taxa from each site. Bold, underlined diagonal numbers are the number of native taxa found on each of the grasslands. Bold numbers above the diagonal numbers are number of native taxa in common between the areas. Normal font numbers below the diagonal are Sørensen's Floristic Similarity Index.

	Kiowa Grassland	Comanche Grassland	Pawnee Grassland
Kiowa Grassland	**397**	256	166
Comanche Grassland	0.65	**387**	207
Pawnee Grassland	0.41	0.52	**406**

removed (Table 12). In this case the similarity index increased with the removal of exotic species. A potential explanation for this result could be that some exotic species may be restricted to specific habitat types associated with just one of the Grasslands. For example, the Canadian River basin may support unique non-native taxa because of its riparian habitat. Unknown edaphic, climatic, or biogeographic barriers may also prevent exotic species from moving farther north into the Comanche Grassland, or likewise from moving farther south

from the north into the Kiowa Grassland. The same result was obtained between the Pawnee and Comanche Grasslands when non-native taxa were excluded, although the increase in similarity index was only 0.01.

CONCLUSIONS

This floristic study has been the first to systemically inventory a large part of northeastern New Mexico that focused particularly on the plains and mesas. Despite securing over 9,600 specimens, the average collection density for the area is still not particularly high. We have not attempted to accurately estimate the collection density given the many recent collections from northern New Mexico by colleagues (mostly) at the University of Wyoming, some of which overlap (especially in Colfax County) this study area. Despite the limited coverage in many areas, we estimate this proejct has documented in excess of 90% of the taxa present in the study area. A priority to focus much of the collecting on privately held lands was acheived, although each property typically was visited only once or a few times. We believe that much more field work will be needed to fully characterize the plant diversity of northeastern New Mexico and that future collecting should continue to focus on prviately held lands and riparian areas, both of which will reveal many new records.

ANNOTATED CHECKLIST

The annotated checklist that follows summarizes information about each plant taxon collected from the study region. It also includes a few taxa known from the area but not collected in this study (e.g., *Packera spellenbergii*). Abbreviations used in the annotated list follow immediately below. Nomenclatural authorities generally follow Snow (2007). In light of widespread acceptance of alternative names for some taxa, the most commonly used synonym is sometimes included in brackets following details of the species. However, some generic changes are so commonly accepted (e.g., *Physaria* instead of *Lesquerella*) that synonomys for these taxa have not been included.

Arrangement of information in the Annotated Checklist for each taxon.—*Latin binomial* (with infraspecific taxa, if appropriate) Authority: total number of collections; county (voucher number with collector [no initials prior to number = Michael Schiebout; NS = Neil Snow, DH = Donald Hazlett, BR = Brian Reif]); vegetation types; elevation range in meters.

Key to symbols prefixing some taxa

SR = state record
# = potential state record
! = non-native (Cox 2001)
!! = non-native noxious (USDA, NRCS 2006)
***** = affinity towards a particular species
? = affinity at the infraspecific level
~ = species tracked by New Mexico Natural Heritage Program
& = known from study area but not collected

County abbreviations

CO = Colfax
HA = Harding
MO = Mora
QU = Quay
SM = San Miguel
UN = Union

Abbreviations for Vegetation Types

mog = montane grassland
fog = foothills grassland
pjw = pinyon-juniper woodland
ppw = ponderosa pine woodland
mcw = mixed coniferous woodland
riw = riparian woodland
oaw = oak wood land
mxs = mixed shrubland
rip = riparian
lac = lacustrine
pal = palustrine
ari = artificial impoundments
rds = roadside
bdl = badlands
rsl = rocky slope
row = rocky wash

FERN ALLIES

Equisetaceae

Equisetum arvense L.: 6; CO (6723), MO (4729); rip-ppw, rip, mog-rip, rip-ppw; 1800–2600 m.

Equisetum laevigatum A. Braun: 34; CO (6724), HA (6579), MO (4723), SM (6169), UN (6807); rip-ppw, oaw-rip, ppw, rip, mog-rip, rip-pmg, pmg, rds, oaw, ari; 1400–2400 m.

Selaginellaceae

Selaginella densa Rydb.: 7; HA (3057), SM (8905) UN (5166 B); mxs, pjw-row, mcw-rip, rip-pmg; 1500–1900 m.

Selaginella mutica D. C. Eaton ex Underw. var. *mutica*: 3; HA (DH-12118), SM (8904); mxs, rip; 1,600–1900 m.

Selaginella underwoodii Hieron.: 4; HA (5449) UN (8694); rip, mcw-rip, pmg-rip, row-rip: 1350–1750m.

FERNS

Aspleniaceae

Asplenium septentrionale (L.) Hoffm.: 1; HA (DH-11716); 1750–1800 m.

Dryopteridaceae

Cystopteris fragilis (L.) Bernh.: 2; CO (6655); rip, mcw; 2400–2450 m.

Woodsia neomexicana Windham: 1; HA (1333-A); pjw-row; 1750–1800 m.

Woodsia oregana D. C. Eaton subsp. *cathcartiana* (B. L. Rob.) Windham: 3; HA (458), UN (3235); ari, ppw-pjw, pmg-rip; 1500–1750 m.

**Woodsia* aff. *oregana* D. C. Eaton subsp. *cathcartiana* (B. L. Rob.) Windham: 1; UN (5165); mcw-rip (on basalt).

Pteridaceae

Astrolepis cochisensis (Goodding) Benham & Windham subsp. *cochiensis*: 1; SM (4788); oaw; 1950–2000 m.

Cheilanthes eatonii Baker: 6; HA (3053), MO (DH-12183), SM (8868), UN (3233); pjw-row, mxs, ari, rip, rsl; 1500–1850 m.

Cheilanthes feei T. Moore: 4; HA (457), MO (DH-12181), UN (5164); ppw-pjw, mcw-rip, rip-row, rsl; 1250–1750 m.

Cheilanthes fendleri Hook.: 3; HA (5448), SM (3713) ; rip, pjw-row, pjw; 1700–1950 m.

Notholaena standleyi Maxon: 3 SM (4838), UN (2483); mxs, rip-row, rip; 1350–1850 m.

Pellaea atropurpurea L.: 1, MO (DH-12180); row, 1500–1600 m.

GYMNOSPERMS

Cupressaceae

Juniperus communis L. var. *depressa* Pursh: 2; CO (4697); rip-ppw, rip; 1800–2450 m.

Juniperus monosperma (Engelm.) Sarg.: 38; HA (4409), MO (487), QU (3681), SM, (6078) UN (5804); pmg-pjw, rip, mxs, pmg, ppw-pjw, pjw-row, mxs-lac, ppw, ari, oaw, rds, pjw, riw, rsl, rip-pmg, rip-row; 1100–2200 m.

Juniperus scopulorum Sarg.: 39; CO (6721) HA (8435) MO (6244) SM (8953) UN (5179); rip-ppw, ppw, rip, rds, mcw, ppw-pjw, fog-ari, pjw, rip-oaw, oaw, rip-pmg, fog, pmg, rip-row, rds-riw, ari, pjw-pmg; 1550–2450 m.

Ephedraceae

Ephedra torreyana S. Watson: 4; QU (4493), SM (6083); ari, mxs, pmg, ppw; 1150–1350 m.

Pinaceae

Abies concolor (Gord. & Glend.) Hildebr.: 2; CO (4715); rip-ppw, mog-rip; 1800–2600 m.

Picea engelmannii Parry ex Engelm. var. *engelmannii*: 1; CO (9126); mog-rip; 2550–2600 m.

Picea pungens Engelm.: 2; CO (6676), MO (3361); rip; 2400–2500 m.

Pinus edulis Engelm.: 28; CO (6743), HA (468), MO (3158), SM (4820), UN (5754); rip-ppw, rip, ppw, ppw-pjw, pjw-row, mxs, mxs-lac, rip-row, pjw, riw, mcw-rip, rsl, pmg,-pjw, rsl-riv; 1450–2350 m.

Pinus ponderosa Douglas ex P. & C. Lawson var. *scopulorum* Engelm.: 24; CO (5320), HA (5458), MO (4752), SM (3741), UN (5174); oaw-rip, mcw-rip, rip-ppw, rip, ppw, mcw, rip, pjw, pjw-row, ppw-pjw, mxs-lac, rip-pmg, mog-rip, lac; 1550–2450 m.

Pseudotsuga menziesii (Mirb.) Franco var. *glauca* (Beissn.) Franco: 7; CO (5319), MO (4767), UN (5175); oaw-rip, mog-lac, ppw, mcw, lac, rip-ppw, mcw-rip; 2250–2450 m.

ANGIOSPERMS

Adoxaceae

Sambucus racemosa L. var. *microbotrys* (Rydb.) Kearn. & Peeb. : 2; CO (6671); rip, mcw-rip; 2250–2450 m.

Agavaceae

Leucocrinum montanum Nutt. ex A. Gray: 1; UN (4218); rip-oaw; 1900–1950 m.

Yucca baccata Torr. var. *baccata*: 5; CO (7932), HA (DH-12146), MO (6376), SM (8906); rip, ppw, rip-ppw, mxs; 1550–2350 m.

* *Yucca* aff. *elata* Engelm.: 4; HA (4975), SM (4849); rip, pmg, rds; 1300–1400 m. According to one of the reviewers, "*Y. elata* does not occur north of Lincoln Co. in eastern NM. The paniculate, accaulescent or short-stemmed yuccas of northeastern NM have been variously treated as variants of *Y. glauca, Y. intermedia* var. *ramosa*, and introgressive hybrids involving various taxa including *Y. elata*. None of these are concepts have strong support. This section of the genus has poorly resolved species boundaries, but yuccas in this study area are not known to fall in the accepted circumscription of *Y. elata*".

Yucca glauca Nutt. var. *glauca*: 23; CO (6513), HA (5005), MO (2259), QU (4460), SM (6035), UN (5608); ppw, mxs, pmg, rip, pmg-pjw, pjw, rds, ari, pmg-rip, riw, row, rsl-riv; 1150–2350 m.

Yucca neomexicana Wooton & Standl.: 1; SM (7093); ari; 2000–2050 m.

Alismataceae

Alisma gramineum Lej.: 1; CO (9025); lac; 1800–1850 m.

Sagittaria cuneata E. Sheld.: 2; UN (8038); oaw, ari; 1550–1600 m.

Sagittaria latifolia Willd.: 1; MO (DH-12107); 1500–1600 m.

Alliaceae

Allium cernuum Roth: 9; CO (8766), MO (8812), SM (8929), UN (1127); rds, rip, mog-lac, mog-rip, fog-ari, oaw, fog; 1550–2600 m.

Allium drummondii Regel: 4; MO (6394), QU (NS-9804), UN (3581); pmg, rip-ppw, rip-pmg; 1400–2350 m.

Allium geyeri S. Watson var. *geyeri*: 4; CO (5227) UN (5147); mcw-rip, ppw; 2250–2350 m.

Allium geyeri S. Watson var. *tenerum* M. E. Jones: 1; CO (5305); oaw-rip; 2350–2400 m.

Allium perdulce S. V. Fraser var. *perdulce*: 14; HA (5840), MO (4557), QU (3664), SM (3921), UN (3172); pmg, rip-pmg, pmg-pjw, mxs-lac, rds, ari, pjw; 1250–1750 m.

Amaranthaceae

! *Amaranthus albus* L.: 1; UN (1531), pmg, 1500–1550 m.

Amaranthus arenicola I. M. Johnst.: 7; HA (8258), UN (7625), pmg, pmg-rip; 1300–1550 m. Most collections were from sandy soils.

! *Amaranthus blitoides* S. Watson: 1; HA (7762); pjw; 1750–1800 m.

! *Amaranthus hybridus* L.: 6; CO (8999), MO (8585), SM (8940), UN (7998); lac, rip, fog-ari, pmg-rip, oaw; pmg; 1400–2050 m.

Amaranthus palmeri S. Watson: 6; HA (7282),UN (7720); rip-pmg, pmg, rip-row; 1350–1500 m.

! *Amaranthus retroflexus* L.: 2; UN (2604); pmg; 1400–1550 m. One collection was made on lava substrate.

Atriplex argentea Nutt. var. *argentea*: 1; HA (4356); rip-pmg; 1350–1400 m.

Atriplex canescens (Pursh) Nutt. var. *canescens*: 18; CO (6790), HA (6592), MO (3166), SM (3928), UN (1160); rds, lac, pmg, ari, ppw, pmg-lac, rip, rip-row, pjw, fog, rda-rip, rsl, rsl-riv; 1350–1650 m.

! *Chenopodium album* L.: 28; CO (8991), HA (8306), MO (8494), SM (7044), UN (6863); lac, ppw, mog-rip, rip, rip-pmg, rip-ppw, rds, ari, fog-ari, riw, pmg, oaw, fog, pmg; 1350–2350 m.

* *Chenopodium* aff. *album* L.: 3; UN (1650) CO (5511), HA (717); rds, pmg; 1650–1950 m.

SR ! *Chenopodium berlandieri* Moq. var. *berlandieri*: 1; UN (2605 B); pmg; 1500–1550 m. Collected on lava substrate. All indications (Kartesz, pers. comm., 2008 ; Allred 2005, 2006; FNA 4: 294) confirm this as a state record.

Chenopodium berlandieri Moq. var. *zschackei* (Murray) Murr. ex Asch.: 8; CO (8987), HA (7195), UN (2649); lac, rds, pmg, ari, rds-rip; 1400–2500 m.

!* *Chenopodium* aff. *capitatum* (L.) Asch.: 1; SM (7034); ari; 2000–2050 m.

Chenopodium desiccatum A. Nelson: 17; HA (714), SM (8926 A), UN (241); pmg, fog-ari, ari, rip-pmg, rip; 1350–2050 m.

* *Chenopodium* aff. *desiccatum* A. Nelson: 1; CO (8718); rds; 2450–2500 m.

Chenopodium fremontii S. Watson: 3; HA (1335), MO (6406 A), UN (1170); fog, rip-ppw, pjw-row; 1750–2350 m.

**Chenopodium* aff. *fremontii* S. Watson: 3; CO (6668), HA (514), UN (5176); rip, pjw, mcw-rip; 1550–2450 m.

! *Chenopodium glaucum* L. var. *glaucum*: 1; SM (7035 A); ari; 2000–2050 m.

!* *Chenopodium* aff. *glaucum*. L. var. *glaucum*: 1; CO (8986); lac; 1800–1850 m.

Chenopodium incanum (S. Watson) A. Heller var. *incanum*: 45; HA (4358), SM (5935), UN (952); rip-pmg, rip, pmg, pjw, mxs, row, fog, rds, pmg-pjw, pmg-pjw; 1150–1850 m.

Chenopodium leptophyllum (Moq.) Nutt. ex S. Watson: 10; HA (6593), MO (7816), QU (2698), UN (7702); rip, pjw, rip-pmg, pmg, rds; 1300–1800 m.

Chenopodium neomexicanum Standley: 1; MO (8829); rip; 2450–2500 m.

Chenopodium pratericola Rydb.: 51; CO (7157), HA (4933), MO (507) SM (2302), UN (7336); rip-pmg, ari, mog-rip, rds, pmg, rip, mxs, riw, row; 1300–2600 m. [= *C. pratericola* Rybd.]

* *Chenopodium* aff. *pratericola* Rydb.: 1; HA (5043); pmg; 1250–1300 m. [=*C.*

Chenopodium simplex (Torr.) Raf.: 4; CO (7508), MO (8493), UN (2072); mog-lac, rip, rip-pmg; 1300–2300 m.

**Chenopodium* aff. *simplex* (Torr.) Raf.: 2; CO (5338), MO (2264); lac, rds; 1800–1950 m.

Cycloloma atriplicifolium (Spreng.) J. M. Coult.: 2; HA (8311), UN (2969); pmg; 1300–1500 m. Specimen collected from sandy soil.

Froelichia gracilis (Hook.) Moq.: 13; HA (3041), MO (8513), UN (960); mxs, rip, pmg, pmg-pjw, rip-row; 1400–1600 m.

! *Kochia scoparia* (L.) Schrad.: 16; CO (7165), HA (7295), MO (2256), SM (8119), UN (7967); ari, lac, rip-pmg, pmg, rds, oaw; 1350–2000 m.

Krascheninnikovia lanata (Pursh) Meeuse & Smit: 10; CO (6498), HA (7225), SM (8125), UN (1651); ppw, pmg, rip-pmg, rip, pmg-rip, ari, pmg-pjw, rsl, rds; 1350–2050 m.

Monolepis nuttalliana (Schult.) Greene: 1; HA (4625); pmg-lac; 1800–1850 m. Specimen was collected from sandy soil.

! *Salsola australis* R. Br. 45; HA (7223), MO (8583), QU (2702), SM (8189), UN (7385); pmg, rip-pmg, pjw, rip, mxs, rds, fog-ari, ari, row, pmg-rsl, rip-row; 1150–2050 m. [= *Salsoa tragus* L.]

! *Salsola collina* Pall.: 2; HA (522), MO (DH-12187); pjw, rip; 1550–1650 m.

Suckleya suckleyana (Torr.) Rydb.: 1; MO (8501); rip; 1550–1600 m.

Anacardiaceae

Rhus aromatica Aiton var. *trilobata* (Nutt.) A. Gray ex S. Watson: 65; CO (7923), HA (5085), MO (7843), QU (3673), SM (6022), UN (5681); rip, ppw, pmg, pmg-pjw, mxs, ppw-pjw, rip-row, ari, rds, pjw, riw, pmg-rip, oaw, rsl, row, rip-oaw, rsl-riv; 1100–2350 m.

Rhus microphylla Engelm. ex A. Gray: 4; SM (6061), QU (9685), SM (9605); mxs, pmg, ppw, rds; 1200–1350 m.

Toxicodendron rydbergii (Small ex Rydb.) Greene: 17; CO (6735), HA (5440), MO (4728), SM (6114), UN (5546); rip-ppw, oaw-rip, rip-ppw, mcw-rip, mog-lac, rip, ppw-pjw, mog-rip, pjw; rip-pmg; 1400–2400 m.

Apiaceae

Ammoselinum popei Torr. & A. Gray: 2; SM (NS-9630); pmg, ppw; 1200–1300 m.

Angelica grayi (J. M. Coult. & Rose) J. M. Coult. & Rose: 1, UN (7983); oaw; 1550–1600 m.

Berula erecta (Huds.) Coville var. *incisa* (Torr.) Cronquist: 2; HA (8293 A), UN (8008); pmg, oaw; 1300–1600 m.

Cicuta maculata L. var. *angustifolia* Hook.: 3; CO (7918), UN (7981); rip, mog-rip, oaw; 1550–2600 m.

!! *Conium maculatum* L.: 2; CO (1837), SM (6139); rds, rip; 1950–2350 m.

Cymopterus acaulis (Pursh) Raf.: 3; UN (3595); rip-pmg, rds; 1400–1600 m.

Cymopterus lemmonii (J. M. Coult. & Rose) Dorn: 4; CO (6704); rip-ppw, rip, mcw-rip, mog-lac; 2250–2450 m.

Cymopterus montanus Torr. & A. Gray: 10; HA (4419), QU (NS-9805) SM (3887), UN (4229); pmg-pjw, rip-pmg, pmg-lac, pjw, rip-oaw, rds, pmg; 1350–1950 m.

Harbouria trachypleura (A. Gray) J. M. Coult. & Rose: 11; CO (4687), HA (8640), MO (6403), SM (6152); rip-ppw, pmg, mog-rip, ppw, lac, rip, ari, pjw, pjw-ppw; 1800–2400 m.

Heracleum sphondylium L. var. *lanatum* (Michx.) Dorn: 3; CO (6673), MO (8852); rip, rip-ppw; 2300–2500 m.
Ligusticum porteri J. M. Coult. & Rose: 3; CO (5309); oaw-rip, mog-rip, mog-lac; 2250–2600 m.
Osmorhiza longistylis (Torr.) DC.: 1; UN (5145); mcw-rip; 2150–2200 m. Specimen collected in basalt substrate.
! *Pastinaca sativa* L.: 1; CO (8762); rds; 2450–2500 m.

Apocynaceae

Apocynum androsaemifolium L.: 2; HA (DH-11729), MO (6411); rip; 1550–2350 m.
Apocynum cannabinum L.: 6; CO (6725), HA (5072), UN (5658); rip-ppw, pmg, mxs, pmg-rip, riw; 1300–2350 m.
Apocynum X floribundum Greene: 1; UN (8032); oaw; 1550–1600 m.
Asclepias arenaria Torr.: 2; HA (8246); UN (2034); pmg, pmg-rsl; 1300–1400 m.
Asclepias asperula (Decne.) Woodson var. *asperula*: 7; HA (4443), MO (4545), QU (NS-9692), SM (4835), UN (6971); pmg-pjw, rds, mxs, pjw, ari, pmg; 1350–200 m.
Asclepias engelmanniana Woodson: 17; HA (5370), MO (7830), QU (6997), SM (8901), UN (5621); mxs, rip, pmg, ari, rds, pmg-rip; 1350–1900 m.
Asclepias involucrata Engelm. ex Torr.: 4; CO (5480), HA (NS-9466), UN (5213); rds, pmg, rsl-riv; 1400–2000 m.
Asclepias latifolia (Torr.) Raf.: 28; HA (7773), QU (2710), SM (5960), UN (5820); pjw, pmg, mxs, rds, pmg-rip, riw, rip, row, rip-row; 1300–1800 m.
Asclepias macrosperma Eastw. 6; HA (6597), MO (8598), SM (8899); rip, mxs; 1450–1900 m.
Asclepias oenotheroides Cham. & Schltdl.: 1; UN (2152); rsl; 1350–1400 m.
Asclepias pumila (A. Gray) Vail: 10; HA (7745), UN (8029); pjw, oaw, pmg-rip, pmg, rds, rip-row; 1350–1800 m.
Asclepias speciosa Torr.: 4; CO (7162), HA (4902), UN (7987); ari, lac, pal, oaw; 1400–2000 m.
Asclepias subverticillata (A. Gray) Vail: 17; CO (7158), HA (6601), MO (8568), SM (5973), UN (1721); ari, lac, rip, pjw, pmg, rds, fog-ari; 1300–2000 m.
Asclepias tuberosa L. var. *interior* (Woodson) Shinners: 1; SM (6299); rip-pmg; 2200–2250 m.
Asclepias viridiflora Raf.: 7; HA (5861), UN (5565); pmg, rip, pmg-rip, ari; 1400–1750 m.
Funastrum crispum (Benth.) Schltdl.: 3; HA (3038), SM (6031), UN (5675); mxs, riw; 1250–1550 m.

Araceae

Lemna minor L.: 3; SM (6127), UN (6799); rip, ari, riw; 1400–2000 m.
**Lemna* aff. *minor* L.: 1; UN (5189); mcw-rip; 2150–2200 m.

Asparagaceae

! *Asparagus officinalis* L.: 3; CO (4281); lac, pmg, ari; 1750–2000 m.

Asteraceae

Achillea millefolium L. var. *lanulosa* (Nutt.) Piper: 19; CO (8736), HA (5101), MO (8799), SM (7100), UN (7986); rds, rip, rip-ppw, ppw, mog-lac, rip, ari, rip-pmg, mcw-rip, oaw; 1550–2450 m.
Agoseris glauca (Pursh) Raf. var. *glauca*: 3; CO (7517), UN (4217); mog-lac, mog-rip, rip-oak; 1900–2300 m.
Ambrosia artemisiifolia L.: 1; SM (2298); rds; 1950–2000 m.
Ambrosia confertiflora DC.: 29; HA (7296), MO (2236), SM (8182), UN (8012); rip-pmg, rip, pmg, pjw, mxs, rds, oaw, fog, pmg-rsl; 1350–2000 m.
Ambrosia psilostachya DC.: 38; HA (7215), MO (8531), QU (2688), SM (8108), UN (7706); pmg, rip, rds, pmg-rip, ari, pmg-rsl, rip-row; 1300–2500 m.
Ambrosia tomentosa Nutt.: 8; CO (8743), MO (8808), SM (7101); rds, ari, lac, rip, fog-ari; 1800–2500 m.
Ambrosia trifida var. *texana* Scheele: 4; CO (1851), UN (7969); rds, oaw, rip; 1350–2350 m.
* *Amphiachyris* aff. *dracunculoides* (DC.) Nutt.: 1; UN (2391), rip; 1350–1400 m.
Antennaria marginata Greene: 3; CO (6720), HA (5456); rip, rip-ppw; 1700–2450 m.
Antennaria parvifolia Nutt.:17; CO (7898), HA (NS-9495), MO (4770), SM (3707), UN (4235); pmg, rip, oaw-rip, ppw, mog-lac, mog, mcw, lac, mog-rip, rip-ppw, pjw, mcw-rip, rip-oaw, eiw; 1550–2650 m.
Antennaria rosea Greene: 3; CO (4685), MO (3355); rip-ppw, mcw-rip, rip; 1800–2500 m.
Antennaria rosulata Rydb.: 1; UN (1014); pmg; 1500–1550 m.
Aphanostephus skirrhobasis (DC.) Trel.: 1; HA; pmg; 1300–1350 m. Collected in sandy soil.
! *Arctium minus* Bernh.: 3; CO (7497), MO (8514), UN (7974); mog-lac, rip, oaw; 1550–2300 m.
Artemisia bigelovii A. Gray: 1; MO (DH-12079); 1700–1800 m.
Artemisia campestris L. var. *pacifica* (Nutt.) M. Peck : 3; CO (8768); rds, mog-rip; 2450–2600 m.
* *Artemisia* aff. *campestris* L.: 1; UN (600); pmg; 1400–1450 m.
Artemisia carruthii A. W. Wood ex Carruth: 6; HA (DH-11708), MO (2250), UN (1440); rds, rip-pmg, pmg; 1300–1950 m.
Artemisia dracunculus L.: 6; CO (7926), MO (8809), UN (7977); rip, oaw, mog-rip, rds; 1550–2600 m.
* *Artemisia* aff. *dracunculus* L.: 1; QU (2692); rds; 1300–1350 m.
Artemisia filifolia Torr.: 30; CO (6631 B), HA (8398), MO (7839), SM (8122), UN (1993); rip, pmg, pmg-rip, rds, rip-row; 1300–2450 m.
Artemisia franserioides Greene: 1; SM (BR-8872); 2800–2900 m.
Artemisia frigida Willd.: 17; CO (9028), HA (7749), MO (8819), SM (8942), UN (8682); lac, rip, rds, mog-rip, pjw, pmg, rip, fog-ari, mxs, pmg-rip, oaw, fog; 1500–2600 m.
* *Artemisia* aff. *frigida* Willd.: 1; HA (757); pmg; 1800–1850 m.
SR *Artemisia ludoviciana* Nutt. var. *incompta* (Nutt.) Cronquist: 9; CO (7905), HA (3045), MO (8810), QU (2695), SM (6048), UN (2143); rip, ppw, mxs, rds, rsl, rip-row; 1250–2500 m. This report is a state record; the closest records (Kartesz, pers. comm., 2008; Flora North America Vol. 19:529) come from Baca and Las Animas counties in Colorado.
Artemsisa ludoviciana Nutt. var. *latiloba* Nutt.: 1; CO (9121); mog-rip; 2550–2600 m. FNA lists this name as a synonym of var. *candicans* (Rydb.) H. St. John. According to FNA the nearest known occurrences are Utah and Wyoming, although the forthcoming Floristic Synthesis of Kartesz (pers. comm., 2008) has records for this taxon under the subspecific epithet *candicans* (Rydb.) Keck as occurring

south and west of the study area in Guadalupe and Sandoval counties, respectively.

Artemisia ludoviciana Nutt. var. *ludoviciana*: 24; CO (8787), HA (5447), MO (8580), SM (8902), UN (8028); rds, rip, ppw, mog-lac, pjw-row, pmg, ari, oaw, pmg-pjw; 1400–2350 m.

* *Artemisia* aff. *tridentata* Nutt.: 3; HA (725); pmg; 1750–1850 m.

Artemisia tridentata Nutt. var. *tridentata*: 3; HA (8627), UN (1439); pmg, rip-pmg; 1700–1850 m.

Artemisia tridentata Nutt. var. *wyomingensis* (Beetle & Young) S. L. Welsh: 2; MO (8579), UN (1994); rip, rds; 1550–1700 m.

Baccharis pteronioides DC.: 3; HA (8297), QU (6985), SM (4833); mxs, rds, pmg; 1150–1800 m.

Baccharis salicina Torr. & A. Gray: 3; HA (8401), UN (8712); rip, pmg-rip; 1400–1550 m.

Baccharis wrightii A. Gray: 6; HA (4418), SM (6046 A), UN (5739); pmg-pjw, pmg, rip-pmg, mxs, riw; 1250–1450 m.

Bahia dissecta (A. Gray) Britton: 1; HA (DH-12195); pmg; 1700 m. [= *Amauriopsis dissecta* (A. Gray) Rydb.]

Bahia pedata A. Gray.: 3; QU (6983), SM (6058); ari-rds, mxs; 1150–1500 m.

Berlandiera lyrata Benth.: 68; HA (4407), MO (4567), QU (4477), SM (6091), UN (5545); pmg-pjw, pmg, rip-pmg, pal, rip, mxs, rds,ari, lac, oaw, pjw, riw, pmg-rsl, rds, rip-row; 1150–2200 m.

Bidens bipinnata L.: 1; UN (2536); rip-row; 1350–1400 m.

Bidens comosa (A. Gray) Wiegand: 2; MO (8529); rip; 1550–1600 m.

Brickellia brachyphylla (A. Gray) A. Gray: 5; HA (8390), MO (DH-12188), SM (8875), UN (1611); rip, mxs, pmg-pjw, rsl; 1450–1900 m.

Brickellia californica (Torr. & A. Gray) A. Gray var. *californica*: 1; UN (8685), pmg-rip; 1500–1550 m.

Brickellia eupatorioides (L.) Shinners var. *chlorolepis* (Wooton & Standl.) B. L. Turner: 2; CO (9027), UN (2854); lac, pmg; 1400–1850 m.

Brickellia grandiflora (Hook.) Nutt. var. *grandiflora*: 2; CO (7921); rip, mog-rip; 1550–2600 m.

!! *Carduus nutans* L.: 11; CO (7473), MO (7841), SM (6158); ppw, lac, rip, ari, pmg, fog-ari; 1550–2300 m.

Centaurea americana Nutt.: 1; SM (7023); rds; 1200–1250 m. [=*Plectocephalus americana* (Nutt.) D. Don in R. Sweet]

! *Centaurea biebersteinii* DC.: 1; CO (7901); rip; 1550–1600 m.

Chaetopappa ericoides (Torr.) G. L. Nesom: 92; CO (4672), HA (4308), MO (2239), QU (4465), SM (4821) UN (5229); rip-ppw, lac, rds, pmg-lac, fog, pmg, pal, rip-pmg, rip, pjw, mxs, ari, oaw, pmg-pjw, rai-pmg ; 1150–2050 m.

Chrysanthemum leucanthemum L.: 1; CO (5317); oaw-rip; 2350–2400 m. [=*Leucanthemum vulgare* Lamark.]

Chrysothamnus pulchellus (A. Gray) Greene var. *baileyi* (Wooton & Standl.) S. F. Blake: 1; UN (2221); pmg; 1450–1500 m. [=*Lorandandersonia baileya* (Wooton & Standl.) Urbatsch, R.P. Roberts & Neubig]

Chrysothamnus vaseyi (A. Gray) Greene: 1; HA (8371); rip; 1300–1350 m.

! *Cichorium intybus* L.: 1; SM (7046); ari; 2000–2050 m.

!! *Cirsium arvense* (L.) Scop.: 4; CO (7155); ari, lac, mog-lac, mog-rip; 1800–2600 m.

Cirsium ochrocentrum A. Gray: 49; HA (7274), MO (2260), QU (7000), SM (2338), UN (7638); rip-pmg, mxs, rds, ari, rsl, pmg-pjw, rip, fog, row, rip-row; 1150–2000 m.

Cirsium parryi (A. Gray) Petrak subsp. *parryi*: 3; CO (6688); rip, mog-lac; 1600–2450 m.

Cirsium scariosum Nutt. var. *coloradense* D. J. Keil: 1; CO (9125); mog-rip; 2550–2600 m.

Cirsium undulatum (Nutt.) Spreng. var. *undulatum*: 61; CO (6736), HA (5465), MO (4578), QU (4484), SM (6145), UN (5629); rip-ppw, lac, rds, ppw, rip, mog-lac, ari, mog-rip, mxs, pmg, pjw, pmg-rip, fog-ari, riw, pmg, oaw, pmg-rsl, fog, rip-row; 1350–2600 m.

!! *Cirsium vulgare* (Savi) Ten.: 2; CO (7941), MO (2478); rip; 1550–2500 m.

Conyza canadensis (L.) Cronquist var. *canadensis*: 20; CO (9037), HA (7298), MO (8833), SM (8210), UN (8708); lac, ari, rip-pmg, pjw, rip, pmg, mxs, fog-ari, rds; 1150–2500 m.

Coreopsis lanceolata L.: 1; UN (4033); rds; 1350–1400 m.

Coreopsis tinctoria Nutt. var. *tinctoria*: 2; MO (DH-11733); 1600–1650 m.

Crepis runcinata (E. James) Torr. & A. Gray var. *glauca* (Nutt.) B. Boivin: 2; HA (4901), pal, rip; 1300–1350 m.

Crepis runcinata (E. James) Torr. & A. Gray var. *runcinata*: 1; CO (9062); mog-rip; 2550–2600 m.

Cyclachaena xanthifolia (Nutt.) Fresen.: 4; HA (8321), MO (8845), UN (8004); pmg, rip, oaw; 1300–2500 m. [=*Iva xanthifolia* Nutt.]

Dietaria bigelovii (A. Gray) D. R. Morgan & R L. Hartman var. bigelovii: 1; CO (9050); mog-rip; 2550–2600 m. [=*Machaeranthera bigelovii* (A. Gray) Greene]

Dieteria canescens (Pursh) Nutt. var. *canescens*: 1; CO (8784); rds; 2450–2500 m. [=*Machaeranthera canescens* (Pursh) A. Gray var. *canescens*]

Dieteria canescens (Pursh) Nutt. var. *glabra* (A. Gray) D. R. Morgan & R. L. Hartman: 1; SM (2331); rds; 1950–2000 m. [=*Machaeranthera canescens* (Pursh) A. Gray var. *glabra*]

Dyssodia papposa (Vent.) Hitchc.: 9; HA (3051), MO (DH-12191), UN (1515); mxs, pmg, pmg-pjw, pmg-rsl, rds; 1500–1700 m.

Engelmannia pinnatifida A. Gray ex Nutt.: 87; CO (5504), HA (5916), MO (8509), QU (6989), SM (6138), UN (5707); rds, pmg, pmg-lac, rip, mxs, pjw, ppw, ari, pmg-rip, riw, row, pjw-pmg, fog, pmg-rsl; 1150– 2200 m.

Ericameria nauseosa (Pall. ex Pursh) G. L. Nesom & G. I. Baird var. *glabrata* (A. Gray) G. L. Nesom & G. I. Baird: 4; CO (7860), UN (8006); rip, lac, oaw, pmg-pjw; 1550–1700 m.

Erigeron bellidiastrum Nutt. var. *bellidiastrum*: 15; HA (4946), QU (3656), SM (3809), UN (5616); pmg, rip, rip-pmg, rds; 1250–1550 m. Many collected from sandy soils.

Erigeron canus A. Gray: 10; CO (4636), HA (5873 A), SM (4520), UN (3959); pmg, lac, rds, fog, pmg-lac; 1700–2050.

Erigeron colomexicanus A. Nelson: 57; CO (5127), HA (5899), MO (6232), SM (6153 B), UN (5737); mxs, lac, rds, pmg-lac, pmg, fog, mxs-lac, rip, ppw, oaw, pjw, rip-pmg, riw, ari, pjw-ppw, pjw-oaw; 1400–2200 m.

Erigeron coulteri Porter: 1; CO (6679), rip; 2400–2450 m.
Erigeron divergens Torr. & A. Gray var. *divergens*: 28; CO (4289), HA (5429), MO (4568), QU (3687), SM (6165), UN (3217); lac, rip-ppw, rds, ppw, mog-lac, rip, mxs, pmg-rip, pjw, pmg, ari, fog-ari; 1300–2300 m.
Erigeron flagellaris A. Gray: 29; CO (4637), HA (5441), MO (4761), QU (2689), UN (7979); pmg, mcw-rip, rip, oaw-rip, rip-ppw, mog-lac,ppw, rip-pmg, lac, mog-rip, rds, oaw; 1300–2400 m.
Erigeron leiomerus A. Gray: 1; CO (3431); mcw; 2400–2450 m.
Erigeron pumilus Nutt. var. *pumilus*: 2; CO (9307), HA (4439); pmg-pjw, pmg; 1400–2500 m.
Erigeron speciosus (Lindl.) DC.: 2; CO (7576); mog-lac, mog-rip; 2300–2600 m.
& *Erigeron subglaber* Cronquist: Not collected but known from study area in San Miguel county (Tables 10, 11).
* *Erigeron* aff. *subtrinervis* Rydb.: 4; CO (7885), MO (8797); rip, mog-lac, mog-rip; 1550–2600 m.
Erigeron subtrinervis Rydb. ex Porter & Britton var. *subtrinervis*: 1; CO (6663); rip; 2400–2450 m.
Evax prolifera Nutt. ex DC.: 5; HA (4332), SM (5940 B), UN (5805); pmg, rds, pmg, rip-pmg; 1300–1500 m.
Evax verna Raf.: 6; HA (4367), SM (4860); rip-pmg, pmg-pjw, rds, mxs; 1300–1450 m.
Gaillardia pinnatifida Torr.: 28; HA (4601), SM (8422), UN (1359); pmg-lac, rip, mxs, rds, pjw, rip-pmg, riw, rsl, pmg, pmg-rsl, rip-row; 1350–1850 m.
Gaillardia pulchella Foug. var. *pulchella*: 25; HA (4969), QU (4488), SM (6012); rip, pmg, rip-pmg, ari, ari-rds, rds, mxs, rsl-pmg, ppw; 1150–1700 m.
~ *Grindelia acutifolia* Steyerm.: 3; CO (8730), UN (2734); rds; 1300–2500 m. [See note in next entry.]
# *Grindelia inornata* Greene: 6; MO (DH-12220), UN (2048); pmg-rsl, rds, rip-pmg, pmg; 1300–1650 m. Some authors consider *G. acutifolia* and *G. inornata* synonyms of *G. hirsutula* Hook. & Arn., e.g. FNA.
Grindelia nuda A. W. Wood var. *aphanactis* (Rydb.) G. L. Nesom: 34; CO (5518), HA (396), MO (7798), QU (2707), SM (7060), UN (7365); rds, ari, ppw, rip, pjw, rip-pmg, pmg, fog-ari, rsl, pmg-pjw, rip-row; 1350–2500 m. [See note under *G. squarrosa*.]
Grindelia nuda A. W. Wood var. *nuda*: 12; CO (9009); HA (8372); MO (2255); SM (8130), UN (6932); lac, rip, pmg, rds, pmg-rip; 1350–2000 m. [See note under *G. squarrosa*.]
Grindelia squarrosa (Pursh) Dunal var. *squarrosa*: 6; CO (7596), UN (8064); mog-lac, ppw, rds, mog-rip, oaw; 1550–2600 m. Some authors synonymize *G. nuda* under *G. squarrosa*.
Gutierrezia sarothrae (Pursh) Britton & Rusby: 41; CO (8985), HA (8625), MO (7815), QU (2682), SM (8957), UN (1538); lac, rds, mog-rip, pmg, rip, pjw, mxs, for-ari, fog, pmg-rsl, rip-pmg, rip-row; 1300–2500 m.
Gutierrezia sphaerocephala A.Gray: 5; HA (7276), QU (6990), SM (8209); rip-pmg, pmg, pmg, rds; 1150–1400 m.
Helenium autumnale L. var. *montanum* (Nutt.) Fernald: 1; MO (8851); rip; 2450–2500 m.
Helianthella parryi A. Gray: 1; CO (7877); rip; 1550–1600 m.
Helianthus annuus L.: 38; CO (6763), HA (8635), MO (8839), QU (2699), SM (8175), UN (7394); rds, lac, ari, ppw, pmg, rip, mxs, fog-ari, pmg-rip, oaw, pmg-pjw, fog, row; 1300–2500 m.
Helianthus ciliaris DC.: 3; SM (7039), UN (5220); ari, fog-ari, pmg; 1450–2050 m.
Helianthus petiolaris Nutt. var. *fallax*: 17; CO (9095), HA (8327), MO (8535), QU (6984), SM (8105), UN (8663); mog-rip, pmg, rip, rip-pmg, rds, pmg-pjw; 1350–2600 m.
Helianthus petiolaris Nutt. var. *petiolaris* (Heiser) B. L. Turner: 27; HA (5019), SM (4889), UN (5626); pmg, mxs, pal, rds, mxs, ari, pmg-rip, rip; 1150–2000 m.
Helianthus pauciflorus Nutt. subsp. *subrHomboideus* (Rydb.) O. Spring & E. E. Schilling: 1; CO (8717), rds, 2450–2500 m. [=*Helianthus rigidus* (Cass.) Desf. var. *subrhomboideus* (Rydb.) Cronquist]
Heliomeris multiflora Nutt. var. *multiflora*: 4; CO (8727), MO (8798); rds, rip; 2300–2500 m. [=*Viguiera multiflora* (Nutt.) S. F. Blake]
Heliomeris multiflora Nutt. var. *nevadensis* (A. Nelson) W.F. Yates: 3; CO (9096), UN (7992); mog-rip, rds, oaw; 1550–2600 m. [=*Viguiera multiflora* (Nutt.) S. F. Blake var. *nevadensis* A. Nelson]
Heliopsis helianthoides (L.) Sweet var. *scabra* (Dunal) Fernald: 3; CO (7512), UN (8036); mog-lac, rds, oaw; 1550–2350 m. [=*Heliopsis helianthoides* (L.) Sweet var. *occidentalis* (T. R. Fisher) Steyerm.]
Herrikia horrida Wooton and Standl.: 1; MO (DH-12205); rsl; 1500–1600 m.
Heterosperma pinnatum Cav.: 1; HA (DH-12210); pjw; 1500–1600 m.
Heterotheca canescens (DC.) Shinners: 5; HA (444), MO (2248), UN (8024); ppw-pjw, rds, oaw, pmg; 1600–1950 m.
Heterotheca subaxillaris (Lam.) Britton & Rusby: 10; HA (8363), UN (7680); rip, rip-pmg, rip-row, pmg; 1300–1500 m.
* *Heterotheca* aff. *villosa* (Pursh) Shinners: 1; UN (1882); rds-rip; 1550–1600 m.
Heterotheca villosa (Pursh) Shinners var. *foliosa* (Nutt.) Harms: 12; CO (7910), HA (7756), MO (8536), SM (8187), UN (568); rip, pjw, pmg, rip-pmg, rds; 1150–1850 m.
? *Heterotheca villosa* (Pursh) Shinners var. aff. *foliosa* (Nutt.) Harms: 1; UN (2789); pmg; 1400–1450 m.
Heterotheca villosa (Pursh) Shinners var. *minor* (Hook.) Semple: 18; CO (9088), HA (8391), SM (6161), UN (1056); mog-rip, rip, pjw-row, fog-ari, rip-pmg, ari, row, pmg, rds; 1300–2250 m.
? *Heterotheca villosa* (Pursh) Shinners var. aff. *minor* (Hook.) Semple: 2; HA (3064), UN (2847); mxs, pmg; 1400–1550 m.
Heterotheca villosa (Pursh) Shinners var. *nana* (A. Gray) Semple: 18; CO (9007), SM (8889), UN (1150); pjw, rds, lac, mxs, riw, pmg, fog, rip-pmg, rip-row; 1350–2500 m.
Hymenopappus filifolius Hook. var. *cinereus* (Rydb.) I. M. Johnst.: 6; HA (4600), MO (6185), SM (4511), UN (3956); pmg-lac, pmg, ppw, lac; 1550–2200 m.
Hymenopappus flavescens A. Gray var. *flavescens*: 17; HA (4328), QU (6998), SM (4876), UN (5759); pmg, ari, rds, riw, rip; 1100–1550 m.
Hymenopappus newberryi (A. Gray) I. M. Johnst.: 2; CO (6684), MO (6404); rip, rip-ppw; 2300–2450 m.
Hymenopappus filifolius var. *polycephalus* (Osterh.) B.L. Turner:

74; CO (5513), HA (4442), MO (4561) QU (4487), UN (5235); rds, ppw, pmg-pjw, pmg, mxs, rip-pmg, rip, pjw, ari, riw, oaw, rsl, rip-row; 1150–2300 m.

Hymenopappus tenuifolius Pursh: 2; CO (6455), UN (2028); fog, pmg-rsl; 1350–2000 m.

Hymenoxys odorata DC.: 9; HA (4321), SM (3858), UN (2573); pmg, rip-pmg, rds; 1350–1500 m.

Hymenoxys richardsonii (Hook.) Cockerell var. *floribunda* (A. Gray) Parker: 1; SM (2322), rds; 1900–1950 m.

Hymenoxys richardsonii (Hook.) Cockerell var. *richardsonii*: 4; CO (7437); ppw, rip, mog-lac; 1550–2350 m.

Iva axillaris Pursh: 9; CO (5341), HA (8442), SM (7042); lac, pmg, ari, rip, mxs-lac; 1450–2050 m.

Lactuca canadensis L. var. *longifolia* (Michx.) Farw.: 2; CO (7518), UN (1763); mog-lac, rds; 1950–2300 m.

! *Lactuca serriola* L.: 22; CO (8994), HA (8296), MO (8841), SM (8962), UN (8050); lac, rds, pmg, rip, pjw, rip-pmg, fog-ari, oaw; 1300–2500 m.

Liatrus punctata Hook. var. *mucronata* (DC) B. L. Turner in B. L. Turner et al.: 7; CO (8770), UN (1773); rds, pmg-rip, pmg; 1400–2500 m. This specimen needs more attention. Not previously known in NM [=*L. mucronata* DC.]

Liatris punctata Hook. var. *punctata*: 10; CO (9029), HA (8271), QU (2676), UN (2581); lac, pmg, rds, rip-pmg; 1300–1850 m.

Lygodesmia juncea (Pursh) D. Don ex Hook.: 14; CO (9010), HA (6587), MO (8571), UN (2394); lac, rip, mxs, pmg, rds, pmg-rip; 1400–1950 m.

* *Lygodesmia* aff. *juncea* (Pursh) D. Don ex Hook.: 4; HA (5872); pmg, pal, rip; 1300–1750 m.

Machaeranthera tanacetifolia (Kunth) Nees: 83; CO (6759), HA (5403), MO (4560), QU (3682), SM (4879), UN (5553); rds, lac, mxs, rip-pmg, pmg-pjw, rip, pmg-lac, pmg, ari, pjw, riw, rsl-pmg; 1250–2000 m.

Melampodium leucanthum Torr. & A. Gray: 90; HA (4438), MO (7809), QU (4485), SM (6081), UN (5715); pmg-pjw, pmg, pmg-lac, rip, mxs, pjw, ppw-pjw, pjw-row, mes-lac, ari, rds, oaw, rip-pmg, riw, rsl, pmg-pjw, pmg-rsl, fog, rip-row, rsl-riv, ppw; 1150–2250 m.

Mulgedium pulchellum (Pursh) G. Don in R. Sweet: 5; CO (9044), MO (8537), UN (1764); mog-rip, rip, rds; 1550–2600 m. [=*Lactuca oblongifolia* Nutt.]

Packera fendleri (A. Gray) W. A. Weber & A. Löve: 1; CO (7868); rip; 1550–1600 m.

Packera neomexicana (A. Gray) W. A. Weber & A. Löve var. *mutabilis* (Greene) W. A. Weber & A. Löve: 26; CO (5490), HA (3307), MO (6184), SM (6151), UN (3951); rds, rip-ppw, oaw-rip, fog, pmg, mxs-lac, ppw, rip, lac, rip-pmg, pjw, mxs; 1400–2400 m.

Packera plattensis (Nutt.) W. A. Weber & A. Löve: 9; HA (5394), SM (6136), UN (5197 A); mxs, pmg-lac, mcw-lac, rip, pjw, pjw-ppw, rds; 1550–2000 m.

& *Packera spellenbergii* (T. M. Barkley) C. Jeffrey: Not collected but known from study area in Union and Harding counties (Tables 10, 11).

Packera tridenticulata (Rydb.) W. A. Weber & A. Löve: 24; CO (5337), HA (5890), MO (4569), SM (3781), UN (5196); lac, rip-ppw, rip, lac, pmg, mxs-lac, rds, rip-pmg, mcw-rip, pjw-pmg, pjw-oaw; 1350–2450 m.

Palafoxia sphacelata (Nutt. ex Torr.) Cory: 14; HA (5041), UN (7700); pmg, rip-pmg, rip, rds; 1250–1550 m.

Parthenium confertum A. Gray: 2; HA (6591), MO (8601); rip; 1550–1600 m.

Parthenium incanum Kunth: 1; HA (NS-9464); rsl-riv; 1550–1600 m.

Pectis angustifolia Torr. var. *angustifolia*: 4; UN (2187); pmg, rds, rip-row; 1300–1550 m.

Pericome caudata A. Gray: 3; HA (DH-12121), CO (7872), MO (DH-12186); rip, rsl; 1550–1700 m.

* *Picradeniopsis* aff. *oppositifolia* (Nutt.) Rydb. ex Britton: 3; HA (4305), MO (8516), UN (204); pmg, rip; 1350–1600 m.

Picradeniopsis oppositifolia (Nutt.) Rydb. ex Britton: 27; CO (6446), HA (8624), SM (8951), UN (1511); fog, mxs, pmg, fog-ari, riw, rds, rip-pmg, pmg-pjw, pjw-mxs; 1300–2050 m

Picradeniopsis woodhousei (A. Gray) Rydb.: 17; HA (5870), MO (8505), UN (5541); pmg, rip, pal, pmg-rip, rds, rip-row; 1400–1750 m.

Pseudognaphalium canescens (DC.) W. A. Weber: 1; HA (DH 12217); rsl; 1700 m.

Pseudognaphalium stramineum (Kunth) W. A. Weber: 6; HA (7221), SM (8095), UN (7692); pmg, rip, pmg-rip, ari; 1350–1600 m.

Psilostrophe tagetina (Nutt.) Greene: 20; HA (9434), MO (4558), QU (4457), SM (6088), UN (2740); rip, pmg, mxs, rds, ari, rip-pmg; 1150–1700 m.

Pyrrhopappus pauciflorus (D. Don) DC.: 1; MO (6351), rds, 2250–2300 m.

Pyrrocoma crocea (A. Gray) Greene var. *crocea*: 1; MO (BR-8424); 2900–3000 m.

Ratibida columnifera (Nutt.) Wooton & Standl.: 91; CO (6786), HA (6607), MO (8805), QU (4461), SM (5953), UN (5217); rds, mog-rip, ari, ppw, rip, pmg, rip-pmg, pjw, ppw-pjw, mxs, fog-ari, riw, oaw, fog, row, pmg-rsl, pmg-pjw; 1150–2600 m.

Ratibida tagetes (E. James) Barnhart: 36; CO (9004), HA (8295), MO (7822), QU (2690 B), SM (5992), UN (7363); lac, pmg, rip-pmg, pjw, rip, ppw-pjw, rds, ari, fog-ari, oaw, pmg-pjw, fog; 1300–2050 m.

Rudbeckia hirta L. var. *pulcherrima* Farw.: 4; CO (7449); ppw, rip, mog-lac, mog-rip; 1550–2600 m.

Rudbeckia laciniata L. var. *ampla* (A. Nelson) Cronquist: 9; CO (6729), MO (8830), UN (7997); rip-ppw, rip, mog-lac, mog-rip, rip-ppw, oaw; 1550–2500 m.

! *Scorzonera laciniata* L.: 24; CO (4658), HA (4612), MO (4554), SM (6135), UN (5522); pmg, lac, pmg-lac, rds, mxs-lac, ppw, oaw, rip, ari, fog-ari, rip-pmg, pjw, rip-oaw; 1350–2050 m.

Senecio bigelovii A. Gray var. *hallii* A. Gray: 2; CO (7578), SM (BR-8548); mog-lac; 2250–2800 m.

Senecio crassulus A. Gray: 2; CO (5328), oaw-rip, mcw; 2350–2450 m.

Senecio eremophilus Richardson var. *kingii* (Rydb.) Greenm.: 1; CO (9053); mog-rip; 2550–2300 m.

Senecio flaccidus Less. var. *douglasii* (DC.) B. L. Turner & T. M. Barkley: 27; HA (5397); MO (8582), QU (4478), SM (2310), UN (5745); mxs, pmg, rip, ari, rds, riw, rip-pmg, pmg-pjw, row, fog, rsl, rip-row; 1150–200 m.

Senecio pudicus Greene: 2; CO (6628); rip, ppw; 2300– *Aster ascendens* Lindl.: 1; UN (8035); oaw; 1550–1600 m. [= *Symphyotrichum ascendens* (Lindl.) Nesom]

Senecio riddellii Torr. & A. Gray: 3; HA (3070), MO (7823), UN (5746); mxs, pmg, riw; 1400–1600 m. [= *S. spartoides* Torr. & A. Gray var. *fremontii* (Torr. & A. Gray) Greeenman]

* *Senecio* aff. *riddellii* Torr. & A. Gray: 2; UN (3024), pmg, 1400–1450 m.

Senecio triangularis Hook.: 1; CO (6657); rip; 2400–2450 m.

Solidago canadensis L var. *canadensis*: 3; CO (7914), MO (8843); rip, mog-rip; 1550–2600 m.

Solidago altissima L. var. *gilvocanescens* (Rydb) Semple: 11; CO (9002), UN (6940); lac, rds, pmg, oaw, rip-pmg, fog; 1450–2500 m. [= *Solidago canadensis* var. *gilvocanescens* Rydb.]

* *Solidago* aff. *canadensis* L.: 1; UN (2521); rip-row; 1350–1400 m.

Solidago gigantea Aiton: 3; CO (7445), SM (8914), UN (7685); ppw, mxs, rip-pmg; 1450–2300 m.

Solidago missouriensis Nutt.: 1; CO (7895), rip; 1550–1600 m.

Solidago mollis Bartl.: 2; UN (8053), HA (8621); oaw, pmg; 1550–1850 m.

* *Solidago* aff. *mollis* Bartl.: 4; HA (1343), UN (2594); pjw-row, pmg; 1500–1800. Union County plants collected on lava substrate.

Solidago parryi (A. Gray) Greene: 1; CO (9082), mog-rip; 2550–2300 m.

\# *Solidago rigida* L. var. *rigida*: 2; CO (8786 A), MO (8842); 2450–2500 m. [= *Oligoneuron ridigum* (L.) Small subsp. *rigidum*]

Solidago simplex Kunth var. *simplex*: 1; CO (7571), mog-lac; 2250–2300 m.

Solidago speciosa Nutt. var. *pallida* Porter: 1; CO (9116); mog-rip; 2550–2600 m.

Solidago velutina DC. subsp. *sparsiflora* (A. Gray) Semple: 1; UN (2450); rip; 1350–1400 m.

! *Sonchus asper* (L.) Hill: 21; CO (9000), HA (4347), MO (8527), QU (4486), SM (3784), UN (5683); lac, ppw, rip-pmg, mxs, rip, pmg, ari, riw; 1150–2300 m.

Stephanomeria pauciflora (Torr.) A. Nelson: 9; HA (8267), SM (5997), UN (5721); pmg, ari, mxs, riw, pmg-pjw; 1250–1850 m.

* *Stephanomeria* aff. *pauciflora* (Torr.) A. Nelson : 3; HA (5892), UN (1537); pmg-pjw, pmg; 1500–1750 m.

Symphyotrichum ericoides (Lindl.) Newsom: 1; UN (2622); pmg; 1500–1550 m. Collected from a lava substrate. [=*Aster ericoides* L. var. *ericoides*]

* *Symphyotrichum* aff. *ericoides* (Lindl.) Newsom: 2; CO (8990), HA (7737); lac, pjw; 1750–1800 m.

Symphyotrichum falcatum (Lindl.) Nesom: 1; CO (1839), rds; 2300–2350 m. [=*Aster falcatus* Lindl. var. *commutatus* (Torr. & A. Gray) A. G. Jones]

Symphyotrichum fendleri (A. Gray) Nesom: 1; UN (1539); pmg; 1650–1700 m. [=*Aster fendleri* A. Gray]

* *Symphyotrichum* aff. *frondosum*: 1; MO (8517); rip; 1550–1600 m.

Symphyotrichum laeve (L.) Löve & Löve var. *geyeri* (A. Gray) Nesom: 2; CO (1822), MO (8804); rds, rip; 2300–2500 m. [=*Aster laevis* L. var. *geyeri* A. Gray]

Symphyotrichum porteri (A. Gray) Nesom: 1; HA (DH-12074); 1700–1800 m. [=*Aster porteri* A. Gray]

* *Symphyotrichum* aff. *porteri* A. Gray: 1; HA (466); ppw-pjw; 1700–1750 m.

Tagetes micrantha Cavanilles: 1; HA (DH-12211); pjw; 1500–1600 m.

! *Taraxacum officinale* Weber ex F. H. Wigg.: 40; CO (4270), HA (8303), MO (4749), SM (4508), UN (608); lac, rds, oaw-rip, rip, mcw-rip, pmg, rip-ppw, ari, pmg-lac, ppw, mcw, mog, mxs-lac, mog-rip, pjw, rip-pmg, oaw; 1300–2650 m.

Tetradymia canescens DC.: 1; CO (7866); rip; 1550–1600 m.

Tetraneuris acaulis (Pursh) Greene var. *acaulis*: 39; CO (5493), HA (4606), MO (6186), SM (4530), UN (4249); rds, lac, rip-ppw, pmg-lac, pmg, mxs, ppw, lac, ari, rip-oaw, pmg-pjw, pmg-rip; 1350–2450 m.

Tetraneuris acaulis (Pursh) Greene var. *caespitosa* A. Nelson: 11; CO (3413), HA (4331), UN (3565); fog, pmg, mxs, rip, rds, rip-pmg, pmg-lac, pjw, pmg; 1350–2500 m.

Tetraneuris argentea (A. Gray) Greene: 3; SM (4822); mxs, rds; 1750–2000 m.

Tetraneuris scaposa (DC.) Greene var. *scaposa*: 73; HA (5021), MO (8512), QU (4476), SM (4823), UN (5228); pmg, pmg-pjw, pal, rip, pjw, mxs-lac, rds, rip-row, ari, mxs, riw, pmg-rip, row, rsl, rsl-riv, rsl-pmg, ppw; 1150–1800 m.

SR *Tetraneuris torreyana* (Nutt.) Greene: 2; HA (NS-9523), SM (3709); pjw-pmg; 1700–1800 m. To the best of our knowledge this is the first vouchered state record, as it was not reported by Flora of North America or Kartesz (pers. comm., 2008). Heil and O'Kane also report it for Apache Co., AZ, and FNA (21: 451) reports it from CO.

Thelesperma filifolium (Hook.) A. Gray var. *intermedium* (Rydb.) Shinners: 8; SM (6076), QU (9785); ari, mxs, pmg, rip-pmg, bdl, ppw; 1150–1500 m.

Thelesperma megapotamicum (Spreng.) Kuntze: 103; CO (7911), HA (6569), MO (4577), QU (4495), SM (4798), UN (5640); rip, fog, pmg-pjw, pmg, mxs, pjw, rds, ppw, ari, oaw, fog-ari, rip-pmg, riw, rsl, pmg-rsl, row, rip-row; 1150– 2250 m

Thelesperma subnudum A. Gray: 1; HA (DH-11644); 1800–1850 m.

Thymophylla acerosa (DC.) Strother: 1; SM (NS-9665); ppw; 1200–1250 m.

Townsendia grandiflora Nutt.: 2; HA (8636); pmg; 1800–1850 m.

! *Tragopogon dubius* Scop.: 90; CO (5502), HA (6606), MO (496), QU (4481), SM (4874), UN (5223); rds, lac, pmg, rip-ppw, mcw-rip, rip, mog-lac, ari, ppw, mog-rip, fog, pmg-lac, mxs, pal, pjw, fog-ari, pmg-rip, riw, oaw, row; 1150–2500 m.

! *Tragopogon porrifolius* L.: 4; MO (4556), UN (3544 A); rds, pmg; 1350–1700 m.

Verbesina encelioides (Cav.) Benth. & Hook. f. ex A. Gray var. *exauriculata* B. L. Rob. & Greenm.: 6; MO (8528), SM (2306), UN (2105); rip, rds, pmg, rip-pmg, rip-row; 1300–1950 m.

Vernonia marginata (Torr.) Raf.: 3; UN (7679); rip-pmg, rip, rip-row; 1350–1500 m.

Xanthisma spinulosum (Pursh) D. L. Morgan & R. L. Hartman: 10; CO (5348), HA (4932), MO (7820), UN (5205); pmg, lac, rip-pmg, riw; 1300–1850 m. [=*Machaeranthera pinnatifida* (Hook.) Shinners var. *glaberrima* (Rydb.) B. L. Turner & R. L. Hartman]

Xanthisma spinulosum (Pursh) D. L. Morgan &R. L. Hartman var. *paradoxa* D. L. Morgan & R. L. Hartman: 1; MO (DH-11743) [=*Machaeranthera pinnatifida* (Hook.) Shinners var. *paradoxa* B. L. Turner & R. L Hartman]

Xanthisma spinulosum (Pursh) D. L. Morgan &R. L. Hartman var. *spinulosum*: 105; CO (6447), HA (5844), MO (4553), QU (4491), SM (5926), UN (8023); pmg, rds, ari, lac, fog, pal, rip-pmg, rip, pmg-pjw, mxs, oaw, riw, row, pmg-rsl, rip-row, ppw, rsl-pmg; 1150– 2300 m. [=*Machaeranthera pinnatifida* (Hook.) Shinners var. *pinnatifida*]

Xantium strumarium L.: 10; CO (8995), HA (8264), MO (8559), UN (2509); lac, pmg, rip-row, rip, rip-pmg, pmg-pjw, pmg-rsl; 1300–1850 m.

Zinnia grandiflora Nutt: 76; CO (1811), HA (5017), MO (2246), QU (4475), SM (4861), UN (5568); rds, pmg, mxs, pal, pmg-pjw, rip, pjw-row, ari, fog-ari, riw, pmg-rip, rsl, row, fog, rip, rip-row; 1150–1950 m

Berberidaceae

Berberis fendleri A. Gray: 3; CO (6716); rip-ppw, rip; 1600–2350 m.

Mahonia fremontii (Torr.) Fedde: 1; SM (NS-9922); pjw; 1900–1950 m.

Mahonia repens (Lindl.) G. Don: 2; CO (7889); rip, mcw; 1550–2450.

Betulaceae

Alnus incana (L.) Moench var. *occidentalis* (Dippel) C. L. Hitchc.: 3; CO (7902), MO (6390); rip, mog-rip, rip-ppw; 1550–2700 m.

Betula occidentalis Hook.: 2; CO (6703), rip-ppw, rip; 2300–2450 m.

Boraginaceae

Cryptantha cinerea (Greene) Cronquist var. *jamesii* Cronquist: 15; HA (5089), QU (NS-9820), UN (5612); pmg, pmg-rip, rds; 1250–1850 m.

Cryptantha crassisepala (Torr. & A. Gray) Greene var. *elachantha* I. M. Johnst.: 32; HA (4433), QU (3670), SM (6067), UN (5232); pmg-pjw, pmg, pal, pmg-lac, rip, rip-pmg, mxs-lac, ari, rds, mxs, riw; 1150–1850 m.

Cryptantha fendleri (A. Gray) Greene: 1; SM (8895); mxs; 1850–1900 m.

Cryptantha minima Rydb.: 10; HA (5378), QU (9752), SM (3884), UN (3552); mxs, pmg, rds, rip-pmg; 1200–1850 m.

Cryptantha thyrsiflora (Greene) Payson: 12; CO (6449), HA (8619), UN (5751); fog, pmg, pjw, riw, ari, oaw, rds; 1400–1850 m.

* *Cryptantha* aff. *thyrsiflora* (Greene) Payson: 1; UN (1136); fog; 1850–1900 m.

! *Cynoglossum officinale* L.: 14; CO (5314), MO (6405), UN (8030); oaw-rip, rip-ppw, mcw-rip, mog-lac, rip, ppw, mog-rip, rip-oaw, oaw; 1550–2400 m.

Ellisia nyctelea (L.) L.: 2; UN (4206); rip-oaw, mcw-rip; 1900–1950 m.

Hackelia floribunda (Lehm.) I. M. Johnst.: 3; CO (7542); MO (8853); mog-lac, rip; 2250–2500 m.

& *Hackelia hirsuta* (Wooton & Standley) I.M. Johnston: Not collected but known from study area in Colfax, Mora, and San Miguel county (Tables 10, 11).

Heliotropium convolvulaceum (Nutt.) A. Gray var. *convolvulaceum*: 9; HA (8350), UN (8657); rip, pmg-rip; 1300–1600 m.

Heliotropium curassavicum L. var. *obovatum* DC.: 1; CO (9031 A); lac ; 1800–1850 m.

Hydrophyllum fendleri (A. Gray) A. Heller var. *fendleri*: 2; CO (5315), oaw-rip, mcw-rip; 2250–2400 m.

Lappula occidentalis (S. Watson) Greene var. *cupulata* (A. Gray) L. C. Higgins: 47; CO (5122), HA (4431), MO (4571), QU (3671), SM (4824), UN (5814); rds, lac, fog, pmg-lac, pmg-pjw, rip-pmg, mxs-lac, ari, rip, pjw, pmg, rip-oaw, rsl-pmg; 1100–2200 m.

? *Lappula occidentalis* (S. Watson) Greene aff. var. *cupulata* (A. Gray) L. C. Higgins: 1; UN (3185); rds; 1550–1600 m.

* *Lappula* aff. *occidentalis* (S. Watson) Greene var. *occidentalis*: 2; HA (NS-9510), SM (NS-9862); pjw-pmg, pjw; 1350–1950.

Lappula occidentalis (S. Watson) Greene var. *occidentalis*: 24; CO (6783), HA (4319), MO (6389), QU (4473), SM (4791), UN (5750); rds, mog-rip, pmg, rip, mxs-lac, ari, oaw, rip-pmg, pjw, riw, pjw-oaw; 1400–2300 m.

Lappula squarrosa (Retz.) Dumort.: 3; CO (9054), MO (3168); mog-rip, rip-row; 2550–2600 m.

Lithospermum incisum Lehm.: 32; CO (3414); HA (6578); QU (NS-9693), SM (3345); UN (5580); pmg-lac, rip, rds, mxs-lac, pmg, pjw, pmg-rip, rip-oaw, ari, pjw-ppw, pjw-oaw; 1150–2050 m.

Lithospermum multiflorum Torr. ex A. Gray: 6; CO (6702), MO (6410); rip-ppw, ppw, mog-lac, rip, mog-rip; 1550–2350 m.

* *Lithospermum* aff. *multiflorum* Torr. ex A. Gray: 1; HA (5025); pmg, 1250–1300 m.

Mertensia franciscana A. Heller: 6; CO (5296); oaw-rip, mcw-rip, rip-ppw, rip, mog-lac; 1800–2400 m.

Mertensia lanceolata (Pursh) A. DC.: 10; CO (5239), MO (4720), UN (4193); mcw-rip, rip-ppw, mcw, mog, mog-rip, mcw-rip, rip-oaw, rds, pmg, oaw; 1800–2650 m.

Nama hispidum A. Gray: 3: CO (9049), QU (6987), SM (1291); mog-rip, rds, ari; 1150–2600 m.

Onosmodium molle Michx. var. *occidentale* (Mack.) I. M. Johnst.: 5; CO (7567), UN (6958); mog-lac, riw, pmg, ari; 1400–2300 m.

Phacelia alba Rydb.: 1; MO (6408); rip-ppw; 2300–2350 m.

Phacelia integrifolia Torr. var. *integrifolia*: 12; HA (4341), SM (6075), UN (3522); rip-pmg, pmg, rip, pal, mxs; 1300–1450 m.

Phacelia popei Torr. & A. Gray: 12; QU (4469), SM (3765); ari, rds, rip-pmg, pjw, bdl, rsl-pmg; 1150–1500 m.

Brassicaceae

! *Alyssum desertorum* Stapf: 1; CO (4666); rip-ppw; 1800–1850 m.

! *Alyssum parviflorum* M. Bieb. var. *micranthum* (C. A. Mey.) Dorn: 5; CO (3446), SM (NS-9864), UN (3462); rip, mcw, rds, pjw-oaw, pjw; 1900–2450 m.

Arabis hirsuta (L.) Scop. var. *pycnocarpa* (M. Hopkins) Rollins: 2; CO (6656); rip, ppw; 2000–2450 m.

! *Barbarea vulgaris* R. Br.: 5; CO (5263), MO (4726); mcw-rip, rip-ppw, rip, pmg-lac, mog-rip; 1550–2400 m.

Boechera fendleri (S. Watson) W. A. Weber: 1; SM (NS-9915); pjw-oaw; 2000–2050 m.

Boechera holboelii (Hornem.) var. *pinetorum* (Tidestr.) Dorn: 1; SM (NS-9847); rip; 1800–1850 m.

! *Camelina microcarpa* Andrz. ex DC.: 15; CO (5495), MO (6206), SM (4532), UN (1778); rds, lac, pmg, mog-lac, ppw, ari, pjw, oaw, rip-oaw; 1550–2300 m.

! *Capsella bursa-pastoris* (L.) Medik.: 10; CO (4706), MO (4724), SM (NS-9902), UN (5187); rip-ppw, oaw-rip, mcw, mog-rip, rip, mcw-rip, rds; 1700–2500 m.

! *Chorispora tenella* (Pall.) DC.: 2; UN (4241); rip-oaw, rds; 1900–2050 m. This may be more common than suggested here due to its early flowering.

! *Conringia orientalis* (L.) Dumort.: 1; UN (3470); rds; 2000–2050 m.

Descurainia incana (Bernh. ex Fisch. & C. A. Mey.) Dorn var. *incana*: 1; CO (7523); mog-lac; 2250–2300 m.

* *Descurainia* aff. *incana* (Bernh. ex Fisch. & C. A. Mey.) Dorn var. *incana*: 1; CO (7587); mog-lac; 2250–2300 m.

Descurainia incana (Bernh. ex Fisch. & C. A. Mey.) Dorn var. *incisa*: 3; CO (7884), SM (NS-9604), UN (1772); rip, rds; 1550–2000 m.

Descurainia pinnata (Walter) Britton *subsp. halictorum* (Cockerell) Detling: 46; CO (4294), HA (4619), MO (3155), QU (3655), SM (4793), UN (4244); lac, pmg, pmg-lac, mxs, rip-pmg, pmg-pjw, rds, rip, ari, oaw, pjw, rip-oaw, bdl,ppw; pjw-oaw; 1100–2050 m. [= *Descurainia pinnata* var. *osmiarum* (Cockerell) Shinners]

! *Descurainia sophia* (L.) Webb ex Prantl: 31; CO (5359), HA (3285), MO (4562), SM (4840), UN (5531); lac, pmg, rip-ppw, rds, pmg-lac, mxs, rip, ari, pjw, pmg-rip, riw, rip-oaw; 1150–2050 m.

Dimorphocarpa wislizeni (Engelm.) Rollins: 10; HA (4948), QU (4492), SM (8203); pmg, rip, ari, rds; 1150–1350 m.

Draba reptans (Lam.) Fernald: 1; UN (3213); pmg; 1550–1600 m.

Erysimum asperum (Nutt.) DC.: 51; CO (6634), HA (4599), MO (2230), SM (3931), UN (142); pmg, rip, oaw-rip, mog-lac, rds, fog, pmg-lac, ppw, pjw, pmg-rip, rsl, rip-oaw; 1400–2400 m.

* *Erysimum* aff. *asperum* (Nutt.) DC.: 1; CO (3398); pmg; 1800–1850 m.

Erysimum aff. *capitatum* (Douglas ex Hook.) Greene: 2; SM (8869), UN (1754); mxs, rds; 1850–2000 m.

Erysimum capitatum (Douglas ex Hook.) Greene var. *argillosum* (Greene) R.J. Davis: 5; CO (6739), MO (6368); rip-ppw, ppw, mog-rip; 2250–2600 m.

Erysimum capitatum (Douglas ex Hook.) Greene var. *capitatum*: 20; CO (5494), HA (727), MO (6335), SM (2300), UN (8003); rds, pmg, pmg-rip, oaw, fog; 1350–2300 m.

! *Erysimum repandum* L.: 2; MO (3149), UN (4221); rip, rip-oaw; 1550–1950 m.

Hesperidanthus linearifolius (A. Gray) Rydb.: 6; CO (9078), HA (1303), MO (6210), mog-rip, fog, pmg, pjw-row, mxs, ppw; 1500–2600 m. [= *Thelypodiopsis linearifolius* (A. Gray Al-Shehbaz]

* *Hesperidanthus* aff. *linearifolius* (A. Gray) Rydb.: 1; SM (4830); mxs; 1750–1800 m.

! *Hesperis matronalis* L.: 1; CO (5318); oaw-rip; 3350–2400 m.

Lepidium densiflorum Schrad. var. *densiflorum*: 28; HA (5024), MO (4563), SM (3696), UN (5642); pmg, mxs, pmg-pjw, pal, rip-pmg, mxs-lac, rds, rip, oaw, pjw, riw; 1250–2250 m.

!! *Lepidium draba* L: 5; MO (4727), UN (4240), SM (9935); rds, mog-rip, pjw, rip-oaw, rip; 1350–2400 m. [= *Cardaria draba* (L.) Desv.]

Lepidium ramosissimum A. Nelson var. *bourgeauanum* (Thell.) Rollins: 17; HA (6586), QU (3651), SM (3910), UN (3506); rip, pal, pmg-pjw, pmg, rip-pmg, bdl, ppw, rds; 1150–1750 m.

? *Lepidium ramosissimum* A. Nelson aff. var. *bourgeauanum* (Thell.) Rollins: 1; SM (NS-9678); ppw; 1200–1250 m.

Physaria fendleri (A. Gray) O'Kane & Al-Shehbaz: 10; QU (3667 B), SM (6069); ari, mxs, rds, rip-pmg, pjw, pmg, ppw; 1100–1500 m.

Physaria intermedia (S. Watson) O'Kane & Al-Shehbaz: 2; SM (4529); lac, rip; 1950–2000 m.

Physaria montana (A. Gray) O'Kane & Al-Shehbaz: 9; CO (4688), HA (4579), MO (3152), UN (4242); rip-ppw, oaw-rip; pmg-lac; mxs-lac; rip, rip-oaw, mcw-rip, rds, pmg; 1750–2400 m.

Physaria ovalifolia (Rydb.) O'Kane & Al-Shehbaz: 15; HA (4444), MO (3159), QU (4459), SM (NS-9664), UN (6826); pmg-pjw, pjw, pmg, rip-row, ari, pmg-rip, rds, rip-pmg, bdl, ppw; 1150–1800 m.

! *Nasturtium officinale* R. Br.: 4; SM (6269), UN (4234); rip-pmg, mcw-rip, rip-oaw, oaw; 1550–2250 m.

Noccaea fendleri (A. Gray) Holub: 8; CO (5260), SM (BR-7259), UN (NS-9304); rip, mcw-rip, mog-lac, ppw, mcw, pmg; 2200–2450 m.

Rorippa sinuata (Nutt.) Hitchc.: 7; CO (4274), MO (8566), UN (8566); lac, pmg-lac, pmg, rip, pmg-rip; 1550–1850 m.

SR *Rorippa teres* (Michx.) Stuckey: 1; MO (8792); rip; 2450–2500 m. The nearest known occurrences (Kartesz, pers. comm., 2008) are Coconino Co., AZ and Brewster and Wood counties, TX.

! *Sisymbrium altissimum* L.: 2; UN (3272); pmg, rds; 1550–2000 m.

Stanleya pinnata (Pursh) Britton var. *pinnata*: 1; CO (6789); rds; 1800–1850 m.

Thelypodium integrifolium (Nutt.) Endl. ex Walp. var. *integrifolium*: 3; HA (DH-12072), MO (DH-12106), UN (1595); pmg-pjw; 1600–1700 m.

Thelypodium wrightii A. Gray subsp. *wrightii*: 1; HA (8463), rip; 1450–1500 m. Specimen collected from sandy soil.

! *Thlaspi arvense* L.: 6; CO (6728), HA (5427), MO (3154), UN (4237; rip-ppw, mog-lac, mxs, rip, rip-oaw, oaw; 1600–2350 m.

Cactaceae

Coryphantha vivipara (Nutt.) Britton & Rose var. *arizonica* (Engelm.) W. T. Marshall: 2; HA (422), UN (5582); pmg, pmg-rip; 1400–1800 m.

Echinocereus coccineus Engelm. var. *coccineus*: 1; SM (3702), HA (NS-9524); pjw, pjw-pmg; 1700–1950 m.

Echinocereus fendleri (Engelm.) F. Seitz var. *fendleri*: 1; SM (3900), pjw; 1450–1500 m.

Echinocereus reichenbachii (Terscheck ex Walp.) F. Haage var. *perbellus* (Britton & Rose) L. D. Benson: 1; QU (NS-9681); pmg; 1150–1200 m.

Echinocereus viridiflorus Engelm. var. *viridiflorus*: 3; CO (4271), UN (3558); lac, rip-pmg; 1400–1850 m.

Opuntia engelmannii Salm-Dyck var. *engelmannii*: 3; CO (6490), SM (7031); ppw, mxs, ari; 1250–2050 m.

Orpuntia imbricata (Haw.) DC. var. *imbricata*: 7; HA (6588), SM (8151), UN (7335); rip, pjw, mxs, rip-pmg, pmg; 1400–1800 m. [*Cylindropuntia imbricata* (Haw.) Kunth var. *imbricata*]

? *Opuntia phaeacantha* Engelm.: 15; CO (7144), HA (4934), MO (6205), SM (5928), UN (5583); ari, pmg, rip-pmg, pmg-pjw, pal, mxs, ppw, rds, oaw; 1300–2250 m. Material inadquate for varietal determination; see next two entries.

Opuntia phaeacantha Engelm. var. *phaeacantha*: 6; CO (6767), HA (5004), UN (5650); rds, pmg, riw; 1350–1850 m.

Opuntia polyacantha Haw. var. *polyacantha*: 4; CO (6516), HA (5062) SM (6129); ppw, rip, rip-pmg, pmg; 1300–2350 m.

Campanulaceae

Campanula parryi A. Gray var. *parryi*: 1; CO (9046); mog-rip; 2550–2600 m.

Campanula rotundifolia L.: 7; CO (6626); rip, mog-rip, rds, ppw, mog-lac; 1550–2600 m.

Triodanis perfoliata (L.) Nieuwl.: 2; SM (6121); rip, rip-pmg; 1950–2250 m.

Cannabaceae

Celtis occidentalis L.: 5; HA (8323), UN (1207); pmg, rip, rds, rip-row; 1300–1650 m.

Celtis reticulata Torr.: 3; HA (NS-9459), UN (3574); rip-pmg, rds, rsl-riv; 1400–1600 m.

Humulus lupulus L. var. *neomexicanus* A. Nelson & Cockerell: 2; CO (7897), MO (8791); rip; 1550–2500 m.

Caprifoliaceae

! *Lonicera tatarica* L.: 1; SM (3368); pmg; 2000–2050 m. Specimen was collected from clay soil.

Symphoricarpos occidentalis Hook.: 5; CO (9092), MO (8820), UN (7984); mog-rip, rds, rip, oaw; 1550–2600 m.

* *Symphoricarpos* aff. *occidentalis* Hook.: 1; CO (7525); mog-lac; 2250–2300 m.

Valeriana arizonica A. Gray: 1; MO (3357); rip; 2450–2500 m

Valeriana edulis Nutt. ex Torr. & A. Gray var. *edulis*: 4; CO (6731), MO (4772); rip-ppw, mog-rip, mog-lac, lac; 2250–2450 m.

Caryophyllaceae

Cerastium brachypodum (Engelm. ex A. Gray) B. L. Rob.: 1; MO (4719); mog-rip; 2350–2400 m.

! *Cerastium fontanum* Baumg. subsp. *vulgare* (Hartm.) Greuter & Burdet: 1; CO (6697); rip-ppw; 2300–2350 m.

Cerastium nutans Raf. var. *nutans*: 2; MO (6333), SM (3695); rds, pjw; 1900–2300 m.

Eremogone fendleri (A. Gray) Ikonnikov: 8; CO (7414), MO (6183), SM (6111); ppw, rds, mog-lac, rip, mog-rip; 1550–2600 m. [=*Arenaria fendleri* A. Gray var. fendleri]

Minuartia michauxii (Fenzl) Farw. var. *texana* (B.L. Robins.) Mattf.: 1; HA (723); pmg; 1750–1800 m.

Paronychia depressa (Torr. & A. Gray) Nutt. ex A. Nelson: 1; UN (1956); rds; 1700–1750 m.

Paronychia jamesii Torr. & A. Gray: 7; HA (8618), QU (2685), SM (8192), UN (2904); pmg, mxs, rds; 1150–1850 m.

Paronychia sessiliflora Nutt.: 6; HA (8617), UN (2130); pmg, pmg-rip, rsl, fog; 1350–1900 m.

Pseudostellaria jamesiana (Torr.) W. A. Weber & R. L. Hartm.: 1; CO (5247); mcw-rip; 2250–2300 m.

Silene antirrhina L.: 1; SM (6162); rip; 1950–2000 m.

! *Silene latifolia* Poir.: 2; CO (7555); mog-lac, oaw-rip; 2250–2400 m.

Silene scouleri Hook. subsp. *hallii* (S. Watson) C. L. Hitchc.: 1; CO (9064); mog-rip; 2550–2600 m.

Ceratophyllaceae

Ceratophyllum demersum L.: 1; UN (7378); ari; 1550–1600 m.

Cleomaceae

Cleome serrulata Pursh: 4; UN (8681); pmg-rip, rip, rip-row; 1350–1550 m.

Polanisia dodecandra (L.) DC. var. *trachysperma* (Torr. & A. Gray) H. H. Iltis: 15; HA (6576), MO (7701), UN (7637); rip, pmg, pmg-rip, fog, rds, rip-row; 1350–1750 m.

Commelinaceae

Commelina erecta L.: 18; HA (3086), MO (DH-12215), SM (8132), UN (2982); mxs, rip, pmg-rip, rds, pmg, pmg-pjw, rip-row; 1350–1900 m.

Tradescantia occidentalis (Britton) Smyth: 25; HA (4944), QU (3654), SM (8873), UN (5734); pmg, rip, rds, mxs, rip-pmg, riw, pmg-rip, riw, pmg-pjw; 1150–1900 m.

Convolvulaceae

Calystegia sepium (L.) R. Br. var. *angulata* (Brummitt) N. H. Holmgren: 1; SM (3903); pjw; 1450–1500 m.

!! *Convolvulus arvensis* L.: 58; CO (5342), HA (4596), MO (8560), SM (4518), UN (5735); lac, oaw-rip, rds, lac, pmg, mog-lac, ari, fog, ppw, pmg-lac, rip, ppw, fog-ari, rip-pmg, pjw, riw, oaw; 1300–2500 m.

Convolvulus equitans Benth.: 21; HA (4306), SM (5933), UN (7633); pmg, pjw, rip, rds, rip-pmg, pmg-pjw, row, rip-row; 1350–1750 m.

* *Cuscuta* aff. *cuspidata* Engelm.: 1; UN (2948); pmg; 1450–1500 m.

* *Cuscuta* aff. *indecora* Choisy: 2; HA (8322), UN (1957); pmg, rds; 1300–1750 m.

Cuscuta umbellata Kunth: 1; UN (DH-11811); 1500–1550 m.

Evolvulus alsinoides (L.) L.: 2; UN (998); pmg, 1450–1550.

Evolvulus nuttallianus Schult.: 16; HA (5003), MO (8589), SM (3896), UN (5549); pmg, rip, pjw, rip-pmg, riw, pmg-rip; 1250–1750 m.

Ipomoea barbatisepala A. Gray: 1; MO (DH-12189); rip; 1500–1600 m.
Ipomoea cristulata Hallier f.: 1; HA (DH-1218); rip; 1500–1600 m.
Ipomoea leptophylla Torr.: 34; HA (6611), MO (8575), QU (6991), SM (8200), UN (7711); rip, mxs, pjw, pmg, rip-pmg; 1150–1800 m.

Cornaceae

Cornus sericea L. var. *sericea*: 1; CO (7899); rip; 1550–1600 m.

Crassulaceae

Sedum integrifolium (Raf.) A. Nelson: 1; CO (6669); rip; 2400–2450 m.

Cucurbitaceae

Cucurbita foetidissima Kunth: 28; HA (6573), MO (7842), QU (2711), SM (6015), UN (171); rip, pmg, rds, mxs, rip-pmg, riw, ari, fog; 1300–2000 m.
Cyclanthera dissecta (Torr. & A. Gray) Arn.: 2; SM (8129); pmg-rip; 1400–1450 m.

Cyperaceae

Bolboschoenus maritimus (L.) Palla subsp. *paludosus* (A. Nelson) A. Löve & D. Löve: 6; CO (9024), HA (DH-12062), MO (7848), SM (8982), UN (7395); lac, pmg, fog-ari, 1500–2050 m.
Carex aquatilis Wahlenb. var. *aquatilis*: 1; CO (5276 A); mcw-rip; 2250–2300 m.
Carex brevior (Dewey) Mack. ex Lunell: 6; CO (7608), HA (5473), SM (6174), UN (5808); mog-lac, rip, rip-pmg, mcw-rip; 1300–2300 m.
Carex emoryi Dewey: 3; CO (5276 B), SM (9852), UN (4264); mcw-rip, rip-oaw, rip; 1800–2300 m.
Carex gravida L. H. Bailey var. *lunelliana* (Mack.) F. J. Herm.: 4; MO (4758), UN (6811); mog-rip, ari; 1550–2400 m.
Carex hystricina Muhl. ex Willd.: 1; UN (8066 A); oaw; 1550–1600 m.
Carex pellita Muhl. ex Willd.: 8; CO (6750), HA (5476), MO (4760), UN (3251); rip-ppw, mog-lac, ppw, mog-rip, rip, ari; 1550–2500 m. [=*Carex lanuginosa* Michx.]
Carex nebrascensis Dewey: 1; MO (6388), rip-ppw; 2300–2350 m.
Carex occidentalis L. H. Bailey: 12; CO (5321), SM (3755), UN (4265); oaw-rip, pmg, rip-ppw, rip, ppw, pjw, rip-pmg, mcw-rip, oaw; 1550–2450 m.
* *Carex* aff. *occidentalis* L. H. Bailey: 1; CO (5360); lac; 1800–1850 m.
Carex inops Bailey subsp. *heliophila* (Mackenzie) Crins 4; CO (6504), MO (4765); mcw, ppw, lac, rip-ppw; 2000–2450 m. [=*Carex pensylvanica* Lam. var. *digyna* Boeck]
* *Carex* aff. *inops* Bailey subsp. *heliophila* (Mackenzie) Crins.: 1; MO (4764); lac; 2400–2450 m.
Carex petasata Dewey: 2; UN (5162); mcw-rip, ari; 1550–1600 m.
Carex praegracilis Boott: 1; HA (DH-11664); 1750–1800 m.
Carex siccata Dewey: 1; CO (6749); rip-ppw; 2300–2350 m.
Carex sprengelii Dewey ex Spreng.: 1; CO (3443); mcw; 2400–2450 m.
Carex stenophylla Wahlenb.: 6; CO (4710), MO (3359), UN (5148); rip-ppw, rip, mcw, mog-rip, mcw-rip; 1550–2500 m.
Carex utriculata Boott: 1; MO (8857 A); rip; 2450–2500 m.
Carex vulpinoidea Michx.: 7; HA (5472), MO (8503), SM (8983), UN (8071); rip, ppw-pjw, fog-ari, ari, oaw; 1550–2050 m.
Cyperus erythrorhizos Muhl.: 3; HA (4926); UN (7387); pmg, ari; 1300–1600 m.
Cyperus esculentus L. var. *leptostachys* Boeck.: 1; MO (8569); rip; 1550–1600 m.
Cyperus odoratus L.; 1; MO (DH-12214); rip; 1550–1650 m.
Cyperus schweinitzii Torr.: 10; HA (8357), MO (DH-12197), UN (7324); rip, mxs, rip-pmg, pmg; 1300–1750 m.
Cyperus squarrosus L.: 1; HA (DH-12213); rip, rsl; 1500–1700 m.
* *Eleocharis* aff. *obtusa* (Willd) Schult.: 1; UN (1629); pmg-pjw; 1650–1700 m.
Eleocharis palustris (L.) Roem. & Schult.: 52; CO (5332), HA (4616), MO (4759), SM (6171), UN (4263); lac, mcw-rip, rip, mog-lac, ppw, mog-rip, pmg-lac, pmg-pjw, pmg, ppw-pjw, mxs-lac, rip-ppw, ari, fog-ari, oaw; 1300–2600 m.
Eleocharis parvula (Roem. & Schult.) Link ex Bluff & Fingerh.: 1; CO (9038); lac; 1800–1850 m. [=*Eleocharis coloradoensis* (Britt.) Gilly]
Schoenoplectus acutus (Muhl. ex Bigelow) A.Löve & D. Löve var. *acutus*: 3; CO (9006), HA (DH 12125), SM (8964 B); lac, fog-ari; 1600–2050 m. Reported but not evidently confirmed for NM, if correct these specimens will confirm its presence.
? *Schoenoplectus pungens* (Vahl) Palla var. aff. *pungens*: 29; HA (5469), MO (8498) QU (NS-9798), SM (3874), UN (5744); rip, pal, pmg-rip, pmg, ari, riw; rds; 1300–2050 m. More recent information suggests these are probably variety *longispicatus* (Britt.) S. G. Sm., since var. *pungens* is not known from NM or adjacent states.
Schoenoplectus tabernaemontani (K. C. Gmel.) Palla: 17; CO (5364), HA (5464), MO (8539), QU (4506), SM (6167), UN (4266); lac, rip, ppw-pjw, rip-ppw, ari, fog-ari, pmg-rip, mcw-rip, oaw-rip, oaw; 1150–2350 m.
Scirpus pallidus (Britton) Fernald: 6; CO (8782), HA (5474), MO (8847), UN (8068); rds, mog-lac, rip, ppw-pjw, rip, oaw; 1550–2500 m.

Elaeagnaceae

!! *Elaeagnus angustifolia* L.: 3; QU (NS-9706), SM (6018); mxs, fog-ari, pmg; 1150–2050 m.

Euphorbiaceae

Argythamnia mercurialina (Nutt.) Müll. Arg.: 1; UN (7693); rip-pmg; 1450–1500 m.
Chamaesyce fendleri (Torr. & A. Gray) Small: 23; HA (5073), MO (7808), QU (2673), SM (8909), UN (5540); rds, pmg, mxs, rip, pmg-rip, pmg-pjw, rsl-riw, ppw; 1300–2000 m.
Chamaesyce geyeri (Engelm.) Small: 1; UN (2485), rip-row; 1350–1400 m.
Chamaesyce glyptosperma (Engelm.) Small: 1; HA (8385); rip; 1450–1500 m. Specimen collected from sandy soil.
Chamaesyce lata (Engelm.) Small: 6; HA (7189), QU (NS-9734), SM (6065), UN (6945); pmg, mxs, rds; 1150–1650 m.
Chamaesyce missurica (Raf.) Shinners: 12; HA (8237), UN (7624); pmg, rip-pmg; 1300–1700 m.

Chamaesyce serpyllifolia (Pers.) Small: 3; HA (7726), MO (8564); pjw, rip; 1550–1791 m.

Chamaesyce stictospora (Engelm.) Small: 2; HA (DH-11656), UN (2746); rds; 1300–1850 m.

Croton texensis (Klotzsch) Müll. Arg.: 37; HA (8320); QU (2669); SM (5994); UN (2101); pmg, rip-pmg, mxs, rds, ari, pmg-rsl, rip, rip-row; 1150–1600 m.

Euphorbia brachycera Engelm.: 2; HA (DH-11784), UN (9334); mxs; 1600–2000 m.

SR *Euphorbia dentata* Michx. var. *dentanta*: 20; HA (6602), MO (7814), QU (2667), SM (8948), UN (1637); rip, rip-pmg, rds, fog-ari, rsl, pmg-rsl, rip-row; 1300–2050 m. As best we can determine our report is a state record and represents a southwestward expansion of the nearest portion of the range from southeastern CO (Las Animas and Baca cos.) and Cimarron Co., OK.

Euphorbia marginata Pursh: 24; HA (8634), MO (8577), UN (7626); pmg, pjw, rip, rip-pmg, ari, rds, fog, row, pmg-rsl, pmg-pjw, rip-row; 1300–1850 m.

Euphorbia spathulata Lam.: 9; HA (4402), QU (NS-9793), SM (5939); pmg-pjw, rds, pjw, pmg, rsl-pmg, ppw; 1150–1450 m.

~ *Euphorbia strictior* Holz.: 4; HA (5064), SM (8202); pmg; 1150–1350. Most specimens collected from sandy soil.

Stillingia sylvatica Garden ex L. subsp. *sylvatica*: 6; HA (5038), UN (982); pmg; 1250–1600 m. Specimens collected from sandy soils.

Tragia ramosa Torr.: 6; HA (6551), MO (8506), QU (NS-9725), UN (5591); rip, mxs, pmg-rip, riw, pmg; 1150–1600 m.

Fabaceae

Amorpha canescens Pursh: 5; HA (4401), MO (6381), SM (6300), UN (8014); pmg-pjw, rip-ppw, rip-pmg, ari, oaw; 1400–1350 m.

Amorpha fruticosa L.: 3; SM (8127); pmg-rip; 1400–1450 m.

Astragalus adsurgens Pall. var. *robustior* Hook.: 3; MO (6198), UN (4252); ppw, rds, rip-oaw; 1900–2200 m. [=*A. laxmannii* Jacq. var. *robustior* (Hook.) Barneby & Welsh]

Astragalus agrestis Douglas ex G. Don: 3; CO (5246), UN (5199); mcw-rip, pmg; 1800–2300 m.

Astragalus bisulcatus (Hook.) A. Gray var. *bisulcatus*: 10; CO (5330), HA (4614), SM (4523), UN (5200); pmg, lac, pmg-lac, mcw-rip; 1500–1850 m.

Astragalus crassicarpus Nutt. var. *crassicarpus*: 5; HA (5055), SM (NS-9936), UN (3511), pmg, rds; 1300–1850 m.

Astragalus drummondii Douglas ex Hook.: 2; CO (7504), UN (4243); mog-lac, rip-oaw; 1900–2300 m.

Astragalus gracilis Nutt.: 2; CO (5128), UN (3495); rds, pmg; 1500–1900 m.

Astragalus hallii A. Gray var. *hallii*: 2; UN (4251); rip-oaw, oaw; 1550–1950 m.

Astragalus lentiginosus Douglas ex Hook. var. *albiflorus* M. E. Jones: 2; SM (3904); ppw, pjw; 1200–1500 m.

Astragalus lotiflorus Hook.: 3; HA (DH-11763), SM (NS-9927), UN (3205 B); pmg, pjw; 1800–1950 m.

Astragalus missouriensis Nutt. var. *missouriensis*: 30; CO (5487), HA (4611), MO (3161), QU (NS-9817), SM (4515), UN (3252); rds, pmg-lac, pmg, pmg-pjw, rip, mxs-lac, rip-row, lac, pjw, pmg-rip, mxs, ari; 1400–2050 m.

Astragalus mollissimus Torr. var. *mollissimus*: 33; HA (5842), QU (3675), SM (3836), UN (6820); pmg, pmg-pjw, rip, ari, oaw, pmg-rip, riw, rip-row, rds, rsl-riw, bdl, pjw; 1150–2000 m.

Astragalus nuttallianus DC. var. *austrinus* (Small) Barneby: 3; QU (NS-9700), SM (NS-9926); pmg, rds, pjw; 1150–1950 m.

Astragalus puniceus Osterh. var. *puniceus*: 1; CO (9060); mog-rip; 2550–2600 m.

* *Astragalus* aff. *racemosus* Pursh: 1; HA (DH-11750); 1850–1900 m.

Astragalus racemosus Pursh var. *racemosus*: 6; CO (5267), SM (4850), UN (3545); mcw-rip, rds, pmg, oaw; 1350–2300 m.

~ *Astragalus shortianus* Nutt.: 1; UN (3478); rds; 1500–1550 m.

Astragalus tenellus Pursh: 1; HA (4615); pmg-lac; 1800–1850 m. Specimen collected from sandy soil.

~ *Astragalus wittmannii* Barneby: 1; HA (DH-11709), pmg; 1800–1850 m. Collected from limestone substrate.

Dalea aurea Nutt. ex Pursh: 15; HA (8426), UN (6967), rip, pmg, rip-pmg, ari, pmg-rsl, rsl, rds; 1350–1700 m.

* *Dalea* aff. *candida* Michx.: 1; UN (2358); rds; 1400–1450 m.

Dalea candida Michx. var. *oligophylla* (Torr.) Shinners: 31; CO (7929), HA (3042), MO (7837), QU (2684), SM (8181), UN (7334); rip, pjw, pmg, rip-pmg, mxs, ari, rds, oaw, pmg-rsl, fog, rip-row; 1350–2050 m.

Dalea enneandra Nutt.: 9; HA (8358), MO (7819), QU (7006), SM (8194), UN (2505); rip, pmg, rds, rip-pmg, rsl, rip-row; 1150–1600 m.

Dalea formosa Torr.: 14; HA (NS-9470), QU (4482), SM (9649); ari, mxs, oaw, pjw, rsl-riw, pjw-pmg, rsl-pmg, pmg, ppw, rds; 1100–1800 m.

Dalea jamesii (Torr.) Torr. & A. Gray: 13; HA (4395), SM (4851), UN (1567); pmg-pjw, pmg, rip, mxs, rds, oaw, pjw, pmg-rip, rsl-riw; 1250–2000 m.

Dalea lanata Spreng. var. *lanata*: 1; HA (8369), rip; 1300–1350 m.

Dalea nana Torr. var. *carnescens* (Rydb.) Kearney & Peebles: 1; HA (3063 B); mxs; 1500–1550. Collected from a rocky substrate.

Dalea nana Torr. & A. Gray var. *nana*: 4; HA (8256); UN (2845); pmg, rip-pmg; 1300–1550 m.

Dalea purpurea Vent. var. *arenicola* (Wemple) Barneby: 10; CO (6766), HA (7219), UN (1883); rds, pmg, mxs, rip-pmg; 1350–1850 m.

* *Dalea* aff. *purpurea* Vent.: 3; HA (451), UN (1095); ppw-pjw, pmg, rds; 1350–1850 m.

Dalea purpurea Vent. var. *purpurea*: 19; CO (5479), HA (5090), QU (4496), SM (3922), UN (1597); rds, pmg, pmg-pjw, ari, mxs, pjw, pmg-rip, oaw; 1300–2500 m.

? *Dalea purpurea* Vent. aff. var. *purpurea*: 1; UN (3994); rds; 1550–1600 m.

Dalea tenuifolia (A. Gray) Shinners: 10; HA (8455), MO (8515), QU (6979), SM (5996), UN (6849); rip, pmg, ppw-pjw, rds, mxs, ari; 1150–1850 m.

Dalea villosa (Nutt.) Spreng. var. *villosa*: 1; UN (1017); pmg; 1500–1550 m.

Desmanthus cooleyi (Eat.) Trel.: 20; HA (8386), MO (7835), QU (6999), SM (6002), UN (7715); rip, pmg, mxs, ari, rds, rip-pmg; 1250–2000 m.

Desmanthus illinoensis (Michx.) MacMill. ex B. L. Rob. & Fernald: 1; UN (2441); rip; 1350–1400 m.

! *Gleditsia triacanthos* L.: 2; HA (529), UN (2401); pjw, rip; 1350–1600 m.

Glycyrrhiza lepidota Nutt. ex Pursh: 17; CO (6756), HA (4904), MO (8836), SM (7118), UN (5673); rip, mog-lac, pmg, pal, rip-ppw, ari, rip-pmg, riw, oaw; 1300–2250 m.

Hedysarum boreale Nutt. var. *boreale*: 4; HA (5463); rip, pmg, pjw-mxs; 1600–1850 m.

Hoffmanseggia glauca (Ortega) Eifert: 10; HA (4398); SM (5924); UN (2069); pmg-pjw, rip-pmg, rds, pmg-rsl, pmg; 1300–1450 m.

Lathyrus eucosmus Butters & H. St. John: 9; CO (7545), MO (8591), SM (4810), UN (4095); mog-lac, rip, oaw, rip-pmg, pjw, rds, rds-riw; 1600–2250 m.

Lathyrus graminifolius (S. Wats.) White: 2; CO (4679), MO (4738); rip-ppw, mog-rip; 1800–2400 m.

Lathyrus lanszwertii Kellogg var. *leucanthus* (Rydb.) Dorn.: 2; CO (5279), UN (4239); mcw-rip, rip-oaw; 1900–2300 m. The taxon boundaries of this and others were discussed for NM by Johnson & Allred 2003).

Lathyrus polymorphus Nutt. var. *incanus* (J. G. Sm. & Rydb. ex Rydb.) Dorn: 1; UN (3205 A), pmg; 1550 –1600 m.

Lupinus argenteus Pursh var. *argenteus*: 2; CO (7515); mog-lac, rds; 2250–2350 m.

Lupinus argenteus Pursh var. *argophyllus* (A. Gray) S. Watson: 3; CO (8772), UN (NS-9310); rds, ppw; 2200–2500 m.

Lupinus plattensis S. Watson: 7; CO (5133), HA (5878), UN (5575); rds, pmg-lac, fog, pmg, pmg-rip; 1350–2000 m.

Lupinus pusillus Pursh var. *pusillus*: 3; HA (5387), MO (3145); mxs, rip; 1550–1600 m.

! *Medicago lupulina* L.: 31; CO (4705), HA (5451), MO (4730), SM (8937), UN (4232); rip, rip-ppw, mcw-rip, mog-lac, ppw, mog-rip, ppw, ppw-pjw, mxs-lac, mog-rip, lac, rds, fog-ari, pmg-rip, pjw, pmg, mcw-rip, rip-oaw, oaw; 1400–2500 m.

! *Medicago polymorpha* L.: 1; CO (5488), rds; 1900–1950 m.

! *Medicago sativa* L.: 13; CO (6784), HA (5460), MO (8834), SM (7070), UN (705); rds, ari, rip, pjw, oaw; 1350–2500 m.

! *Melilotus albus* Medik.: 35; CO (8998), HA (6604), MO (8565), SM (8918), UN (7323); lac, rip, rip-pmg, ppw-pjw, pjw, pmg, mxs, ari, rds, pmg, pmg-pjw, fog, rip-row; 1300–2500 m.

! *Melilotus officinalis* (L.) Pall.: 79; CO (5516), HA (4323), MO (4546), QU (4501), SM (6049), UN (5237); rds, lac, rip-ppw, pmg, ari, mog-lac, ppw, mog-rip, fog, pmg-lac, mxs, rip, pjw, ppw-pjw, fog-ari, rip-pmg, oaw; 1150–2500 m.

Mimosa aculeaticarpa Ortega var. *biuncifera* (Bentham) Barneby: 3; HA (4954 B), UN (861); pmg, rds; 1300–1400 m.

Mimosa borealis A. Gray: 6; HA (5032), QU (4483), SM (NS-9648), UN (2135); pmg, ari, riw, rsl, ppw; 1150–1400 m.

Oxytropis lambertii Pursh var. *bigelovii* A. Gray: 11; CO (5124), HA (5057), UN (3208); rds, rip-ppw, ppw, rip, pmg; 1300–1900 m.

Oxytropis lambertii x *Oxytropis sericea*: 1; CO (9114); mog-rip; 2550–2600 m.

Oxytropis sericea Nutt. var. *sericea*: 9; CO (5358), HA (3291), MO (6242 B), SM (7125); lac, rip-ppw, mog-rip, rds, ari, mcw-rip, pmg; 1700–2600 m.

Pediomelum argophyllum (Pursh) J. W. Grimes: 2; CO (7550), UN (7975); mog-lac, oaw; 1550–2300 m.

Pomaria jamesii (Torr. & A. Gray) Walp.: 16; HA (4312), QU (NS-9716), SM (8195), UN (6870); pmg, rip, pmg-rip, rds; 1100–1550 m.

Prosopis glandulosa Torr. var. *glandulosa*: 13; HA (6565), QU (4489), SM (6001); rip, pmg, rip-pmg, mxs; ari, rds; 1150–1600 m.

Psoralidium lanceolatum (Pursh) Rydb.: 6; CO (6474), HA (4985), UN (237); ppw, rip, mxs, pmg-rip, pmg; 1350–2050 m.

Psoralidium tenuiflorum (Pursh) Rydb.: 76; CO (7472), HA (5915), MO (6241), QU (2701), SM (8917), UN (7307); ppw, lac, fog, pmg, pjw, rip, mxs, rds, ari, rip-pmg, riw, oaw, pmg-rsl, rsl, row, rip-row; 1250–2000 m.

Robinia neomexicana A. Gray var. *neomexicana*: 11; CO (5327), HA (5399), MO (3139), UN (8060); oaw-rip, mog-lac, rds, ppw, mxs, rip, oaw; 1450–2350 m.

! *Robinia pseudoacacia* L.: 2; HA (510), UN (2862); pjw, pmg; 1400–1600 m.

Senna roemeriana (Scheele) Irwin: 6; SM (5930); rds, mxs, ari; 1250–1500 m.

Sophora nuttalliana B. L. Turner: 40; CO (4640), HA (4396), MO (4551), QU (4467), SM (6155) UN (5755); pmg, lac, pmg-pjw, rip-pmg, mxs, pmg-lac, rip, pjw, mxs-lac, rds, rip-row, ari, fog-ari, riw; 1150–2050 m.

Thermopsis montana Nutt. var. *divaricarpa* (A. Nelson) Dorn: 1; UN (4261); rip-oaw; 1900–1950 m.

Thermopsis montana Nutt. var. *montana* : 7; CO (4703), MO (4774); rip-ppw, mcw-rip, ppw, mog-lac, mog-rip, lac, oaw; 1800–2600 m.

! *Trifolium pratense* L.: 6; CO (6648), MO (8813), rip, mog-lac, mog-rip, rds, rip-ppw; 2250–2600 m.

! *Trifolium repens* L.: 7; CO (7556), MO (8814), UN (5146); rip, mog-lac, mog-rip, rip-ppw, mcw-rip; 1550–2500 m.

Vicia americana Muhl. ex Willd. var. *americana*: 9; CO (6718), MO (8793), UN (5201); rip-ppw, rip, mcw-rip, ppw, mog-lac; 1800–2500 m.

Vicia americana Muhl. ex Willd. var. *minor* Hook.: 21; CO (4642), MO (4773), SM (6150), UN (1720); pmg, lac, ppw, mog-rip, rds, rip-ppw, ppw, rip, rip-pmg, pmg-pjw, rip-oaw, pjw-oaw; 1600–2450 m.

Vicia ludoviciana Nutt. var. *ludoviciana*: 12; CO (4301), HA (4584), SM (3793), UN (4130); lac, pmg, pmg-lac, rip-pmg, pmg-pjw, rds, mxs-lac, pjw; 1350–1950 m.

Fagaceae

Quercus gambelii Nutt: 21; CO (6442), HA (9491), MO (4725), SM (9839), UN (8059); fog, rip-ppw, oaw-rip, rip-mcw, rds, mog-lac, rip, ppw, mog-rip, rip-ppw, oaw; 1550–2500 m.

Quercus grisea Liebm.: 6; HA (4411), MO (4550), SM (8892), UN (5726); pmg-pjw, mxs, rds, riw, rip; 1350–1900 m.

Quercus X *undulata* Torr.: 23; HA (5459), MO (6207), SM (4792), UN (1753); rip, pjw-row, ppw-pjw, lac, ppw, rip-

row, oaw, mxs, rip-pmg, pjw, riw, rds, pmg-pjw, rsl-riv; 1350–2400 m.

* *Quercus* aff. X *undulata* Torr.: 2; HA (3312), SM (3708); mxs-lac, pjw; 1750–1950 m.

Gentianaceae

Centaurium calycosum (Buckley) Fernald; 2; HA (7241), MO (DH-11731); rip-pmg; 1350–1400 m. [=*Zeltnera calyca* (Buckley) Mansion]

Frasera speciosa Douglas ex Griseb.: 3; CO (7581); mog-lac, ppw, oaw; 1550–2350 m.

Gentiana parryi Engelm.: 1; HA (8326); pmg; 1300–1350. Specimen collected from sandy soil.

Gentianopsis detonsa (Rottb.) Ma var. *elegans* (A. Nelson) N. H. Holmgren: 1; CO (9056); mog-rip; 2550–2600 m.

Geraniaceae

! *Erodium cicutarium* (L.) L'Hér. ex Aiton: 23; CO (4681), HA (4605), MO (6211), SM (3721), UN (1438); rip-ppw, mcw; pmg-lac, mxs, ppw, mxs-lac, rds, rip, lac, ari, fog-ari, pjw, rip-pmg, pmg, pjw-pmg; 1550–2450 m.

Geranium atropurpureum A. Heller var. *atropurpureum*: 5; CO (6734), MO (8818), UN (9324); rip-ppw, rip, rds, ppw; 2150–2500 m.

Geranium caespitosum E. James var. *caespitosum*: 9; CO (6658), UN (7993); rip, ppw, mog-lac, rds, mog-rip, oaw; 1550–2600 m.

Geranium richardsonii Fisch. & Trautv.: 2; CO (6659); rip, mog-rip; 2400–2600 m.

Grossulariaceae

Ribes aureum Pursh var. *aureum*: 3; UN (6846); ari, rip-oaw; 1550–1950 m.

Ribes cereum Douglas: 7; CO (4674), UN (3255); rip-ppw, mog-rip, mcw, mcw-rip, rds, ari, ppw; 1600–2600 m.

Ribes leptanthum A. Gray: 4; CO (3427), SM (6122), UN (4213); mcw, rip, rip-oaw, oaw; 1900–2450 m.

Hydrangeaceae

Jamesia americana Torr. & A. Gray var. *americana*: 1; CO (6630); rip; 2400–2450 m.

Philadelphus microphyllus A. Gray: 1; CO (7912); rip; 1550–1600 m.

Hypericaceae

Hypericum perforatum L.: 1; CO (7583); mog-lac; 2250–2300 m.

Iridaceae

Iris missouriensis Nutt.: 11; CO (5298), HA (4624), MO (4735), SM (NS-9897); oaw-rip, mcw-rip, pmg, rip-ppw, ppw, mcw; pmg-lac, mog-rip, oaw, rds; 1700–2450 m.

Sisyrinchium demissum Greene: 4; CO (5287), UN (5142); oaw-rip, rip, mcw-rip, pmg-rip; 1500–2450 m.

* *Sisyrinchium* aff. *montanum* Greene: 1; MO (4768), lac; 2400–2450 m.

Juncaceae

Juncus arcticus Willd. var. *balticus* (Willd.) Trautv.: 24; CO (4282), HA (4949), MO (4757), SM (7078), UN (4262); lac, mcw-rip, pmg, rip-ppw, rip, ari, mog-lac, ppw, mog-rip, pal, pjw, oaw, rds, pmg-rip, rip-oaw; 1300–2600 m.

Juncus bufonius L.: 1; MO (8596); rip; 1550–1600 m.

Juncus dudleyi Wiegand: 5; CO (7483), HA (476), MO (8859), UN (5633); ppw, ppw-pjw, rip, pmg-rip; 1400–2500 m.

Juncus effusus L.: 1; SM (3751 A); pjw; 1900–1950 m.

Juncus ensifolius Wikstr. var. *montanus* (Engelm.) C. L. Hitchc.: 6; CO (7612), MO (8860), SM (6320); ppw, mog-lac, mog-rip, rip, rip-pmg; 2200–2600 m.

Juncus filiformis L.: 2; CO (5329), UN (3262); oaw-rip, ari; 1550–2400 m.

Juncus interior Wiegand: 7; HA (5454), MO (8504), SM (6303), UN (3603); rip, pjw, pjw-row, rip-pmg; 1400–2200 m.

Juncus longistylis Torr.: 2; CO (9146); ppw, mog-rip; 2250–2600 m.

Juncus nodosus L.: 1; CO (7412), HA (DH-11718), UN (8067); ppw, oaw; 1550–2300 m.

Juncus tenuis Willd.: 1; UN (7384); ari; 1550–1600 m.

Juncus torreyi Coville: 8; HA (7251), MO (8502), UN (7689); rip-pmg, rip, ari; 1300–1600 m.

Luzula comosa E. Mey.: 1; CO (6639); rip; 2400–2450 m.

Lamiaceae

Dracocephalum parviflorum Nutt.: 6; CO (7564), MO (8724), SM (6113); mog-lac, rds, rip, rip-ppw; 1950–2500 m.

Hedeoma drummondii Benth.: 2; HA (8610), SM (8877); pmg, mxs; 1800–1900 m.

! *Marrubium vulgare* L.: 16; CO (7876), HA (4977), MO (6195), SM (6310), UN (1201); rip, pmg-lac, pmg, mxs, rds, ppw, rip-pmg, ari, oaw; 1300–2200 m.

Mentha arvensis L.: 8; CO (7527), HA (8309), MO (8794), UN (8037); mog-lac, mog-rip, ppw, pmg, rip, oaw; 1300–2600 m.

Monarda fistulosa L. var. *menthifolia* (Graham) Fernald: 4; CO (7566), mog-lac, ppw, rip, rds; 1550–2350 m.

Monarda pectinata Nutt.: 15; HA (4359), MO (6338), QU (4497), SM (5995), UN (5699); rip-pmg, rds, ari, rip-pmg, riw, pmg; 1100–2300 m.

Monarda punctata L. var. *occidentalis* (Epling) Palmer & Steyerm.: 2; HA (5067); pmg, rip; 1300–1350 m.

Prunella vulgaris L.: 3; CO (6709); rip-ppw, rip, ppw; 2250–2450 m.

Salvia reflexa Hornem.: 17; HA (3077), MO (8530), SM (8955), UN (1203); mxs, rip, fog-ari, pmg, rds, rip-pmg, row, pmg-pjw; 1300–2050 m.

Stachys pilosa Nutt. var. *pilosa*; 2; CO (7875); rip, ppw;1550–2300 m. These specimens were misidentified originally as *S. palustris* L., which occurs in the northcentral and northeastern US.

Teucrium laciniatum Torr.: 36; HA (5904), MO (2231), QU (4462), SM (6094), UN (5555); pmg, pmg-pjw, mxs, rip, rds, ari, pjw, pmg-rip, riw, oaw; 1150–2200 m.

Liliaceae

Calochortus gunnisonii S. Watson var. *gunnisonii*: 1; CO (7529); mog-lac; 2250–2300 m.

& *Calochortus gunnisonii* S. Watson var. *perpulcher* Cockerell: Not collected but known from study area in Colfax, Mora and San Miguel counties (Tables 10, 11).

Linaceae

Linum aristatum Engelm.: 2; SM (3808), UN (5731); rip-pmg, riw; 1400–1450 m.

Linum berlandieri Hook. var. *berlandieri*: 1; UN (5206); pmg; 1450–1500 m.

Linum lewisii Pursh var. *lewisii*: 38; CO (4298), HA (4592), MO (8789), SM (4509), UN (4245); lac, rip-ppw, rds, ppw, mog-rip, pmg-lac, pmg, mxs-lac, rip, ari, rip-pmg, rip-oaw, row, pjw-pmg, pjw; 1350–2600 m.

Linum pratense (Norton) Small: 1; QU (NS-9808); pmg; 1400–1450 m.

Linum puberulum (Engelm.) A. Heller: 12; HA (4594), MO (2240), QU (NS-9780), SM (3891), UN (3560); pmg-lac, rip, pmg, rds, mxs, pjw; 1150–1950 m.

Linum rigidum Pursh var. *compactum* (A. Nelson) C. M. Rogers: 7; CO (6433), HA (5837), QU (NS-9790), UN (354); 1300–2000 m.

Linum rigidum Pursh var. *rigidum*: 4; MO (6199), SM (7094), UN (6956); ppw, ari, rip-pmg, pmg; 1450–2200 m.

Loasaceae

Cevallia sinuata Lag.: 1; QU (7005), ari-rds; 1150–1200 m.

Mentzelia decapetala (Pursh ex Sims) Urb. & Gilg ex Gilg: 2; MO (8604), UN (2161); rip, rsl; 1350–1600 m.

* *Mentzelia* aff. *multiflora* (Nutt.) A. Gray: 1; QU (4474 A); ari; 1100–1200 m.

Mentzelia multiflora (Nutt.) A. Gray var. *multiflora*: 9; CO (6477), QU (6980), SM (7119), UN (7978); ppw, ari-rds, ari, rds, oaw, pmg, row; 1150–2050 m.

? *Mentzelia multiflora* (Nutt.) A. Gray var. aff. *multiflora*: 1; QU (NS-9680); pmg; 1150–1200 m.

Mentzelia nuda (Pursh) Torr. & A. Gray var. *nuda*: 4; QU (4474 B), SM (5979), UN (1776); ari, pmg, rds; 1150–2000 m.

* *Mentzelia* aff. *nuda* (Pursh) Torr. & A. Gray var. *nuda*: 1; CO (5349), lac; 1800–1850 m.

Mentzelia nuda (Pursh) Torr. & A. Gray var. *stricta* (Osterh.) Harrington: 34; CO (7890), HA (7184), QU (6988), SM (5956), UN (7343); rip, pmg, rip-pmg, rds, rsl, fog, pmg-rip, rip-row; 1150–1900 m.

Mentzelia nuda (Pursh) Torr. & A. Gray aff. var. *stricta* (Osterh.) Harrington: 3; QU (2693), UN (2785); rds, pmg; 1300–1450 m.

Mentzelia oligosperma Nutt. ex Sims: 1; HA (6567); rip; 1550–1200 m.

* *Mentzelia* aff. *oligosperma* Nutt. ex Sims: 1; MO (8597); rip; 1550–1600 m.

Mentzelia reverchonii (Urb. & Gilg) H. J. Thomps. & Zavort.: 2; HA (7222), UN (1198); pmg, rds; 1350–1650 m.

Malvaceae

Abutilon parvulum A. Gray: 3; SM (6066), UN (5732); mxs, riw; 1300–1450 m.

Callirhoë involucrata (Torr. & A. Gray) A. Gray var. *involucrata*: 4; UN (6843); ari, oaw, rds; 1550–2000 m.

! *Malva neglecta* Wallr.: 11; CO (4704); HA (5867), MO (8511), SM (8933), UN (7710); rip-ppw, pmg, lac, rip, fog-ari, mcw-rip, rip-pmg; 1450–2450 m.

Sidalcea candida A. Gray var. *candida*: 3; CO (6722); rip-ppw, rip, mog-rip; 1550–2600 m.

Sphaeralcea angustifolia (Cav.) G. Don: 19; MO (DH-12060), HA (4400), SM (4858), UN (2620); pmg-pjw, pmg, rds, mxs, pjw, rip-pmg, riw, rip, pmg-rsl, ppw; 1200–1500 m.

Sphaeralcea coccinea (Nutt.) Rydb. var. *coccinea*: 75; CO (5361), HA (4404), MO (4544), QU (2679), SM (4831), UN (6896); lac, pmg, rds, fog, pmg-lac, pmg-pjw, pmg-rip, mxs, rip, pjw, riw, mcw-rip, oaw, rsl-pmg, ppw; 1150–2200 m.

Sphaeralcea fendleri A. Gray var. *fendleri*: 3; HA (5398), MO (8581), SM (2332); mxs, rip, rds; 1550–2000 m.

Martyniaceae

Proboscidea louisianica (Mill.) Thell subsp. *louisianica*: 2; HA (8331), UN (7647); pmg; 1300–1500 m. Collected from sandy soils.

Melanthiaceae

Veratrum californicum T. Durand: 2; CO (5272); mcw-rip, mog-lac; 2250–2300 m.

Zigadenus elegans Pursh: 2; CO (7536); mog-lac; 2250–2300 m.

Moraceae

! *Maclura pomifera* (Raf.) C. K. Schneid.: 1; HA (DH-12056); 1500–1550 m.

! *Morus alba* L.: 1; HA (NS-9458); rsl-riw; 1550–1600 m.

Myrsinaceae

Lysimachia ciliata L.: 2; CO (7402); ppw, mog-lac; ppw, mog-lac; 2250–2300 m.

Nyctaginaceae

Abronia fragrans Nutt. ex Hook. var. *fragrans*: 23; HA (5027), QU (4500), SM (3869), UN (625); rds; pmg, rip, rip-pmg, ari; 1150–1600 m.

Mirabilis albida (Walter) Heimerl: 2; CO (1830 A), HA (8328); rds, pmg, 1300–2500.

* *Mirabilis* aff. *hirsuta* (Pursh) MacMill.: 2; UN (7332); rip-pmg, pmg; 1400–1550 m.

Mirabilis linearis (Pursh) Heimerl: 38; CO (6788), HA (5053), MO (7825), QU (2666), SM (8944), UN (5678); rds, pmg, rip, pmg, ari, fog-ari, rip-pmg, riw, oaw, fog, rsl, row, rip-row; 1300–2050 m.

Mirabilis multiflora (Torr.) A. Gray var. *multiflora*: 6; CO (6469), HA (8453), SM (4877), UN (2162); ppw, rip, rds, pmg-pjw, rsl; 1350–2050 m.

Mirabilis nyctaginea (Michx.) MacMill.: 2; UN (5688); riv, oaw; 1350–1600 m.

Oleaceae

Forestiera pubescens Nutt. var. *pubescens*: 2; HA (8472), SM (3776); rip, rip-pmg; 1400–1500 m.

! *Syringia vulgaris* L.: 1; HA (NS-9473); rsl-riw; 1550–1600 m.

Onagraceae

Calylophus hartwegii (Benth.) P. H. Raven subsp. *fendleri* (A. Gray) Towner & P. H. Raven: 2; SM (8920), UN (3952); fog-ari, pmg; 1950–2050 m.

? *Calylophus hartwegii* (Benth.) P. H. Raven subsp. aff. *fendleri* (A. Gray) Towner & P. H. Raven: 2; UN (3212), QU (NS-9727); pmg; 1150–1600 m. Collected from rocky substrate.

Calylophus hartwegii (Benth.) P. H. Raven subsp. *pubescens* (A. Gray) Towner & P. H. Raven: 18; HA (4415), QU (4458), SM (5982) UN (4151); 1150–1750 m.

Calylophus lavandulifolius (Torr. & A. Gray) P. H. Raven: 23; CO (5482), HA (733), QU (NS-9813), SM (8205), UN (1521);

rds, pmg-lac, pmg, pmg-rsl, rip-pmg, pmg-pjw, rip-oaw, rip-row; 1150–1950 m.

Calylophus serrulatus (Nutt.) P. H. Raven: 38; HA (4898), QU (2686), UN (6848); pal, pmg, rds, riw, pmg-rip, ari, fog; 1250–1840 m.

Epilobium ciliatum Raf. var. *glandulosum* (Lehm.) Dorn: 4; CO (7560), MO (8800); mog-lac, rip; 2250–2500 m.

Gaura coccinea (Nutt.) Pursh: 105; CO (5123), HA (5087), MO (4549), QU (4499), SM (5931), UN (5749); pmg, rds, fog, ppw, pal, mxs, rip-pmg, rip, pmg-pjw, pjw, rds, ari, oaw, lac, pjw, riw, mcw-rip, row, rip-row, rsl-pmg; 1100–2250 m.

Gaura parviflora Douglas ex Lehm.: 33; CO (6762), HA (7253), MO (2261), QU (7008), SM (5985), UN (1668); rds, lac, ari, rip-pmg, rip, pmg, ppw, mxs, fog-ari, oaw; 1150–2200 m. [=*Gaura mollis* James]

Gaura villosa Torr. var. *villosa*: 13; HA (4940), QU (7007), UN (317); pmg, rds, pmg-rip; 1150–1550 m.

Ludwigia peploides (Kunth) P. H. Raven: 1; UN (7370); ari; 1550–1600 m.

Oenothera albicaulis Pursh: 46; CO (5496), HA (5843), MO (3147), QU (4468), SM (6064), UN (5771); rds, rip-ppw, pmg, rip-pmg, rip, pmg-pjw, mxs, pmg-lac, mxs-lac, ari, pjw, riw; 1100–2250 m.

* *Oenothera* aff. *albicaulis* Pursh: 2; MO (6342), SM (2299); rds; 1950–2300 m.

Oenothera canescens Torr. & Frém.: 3; CO (DH-11766), UN (6813); ari, pmg; 1400–1900 m.

Oenothera cespitosa Nutt. var. *cespitosa*: 1; SM (NS-9642); ppw; 1200–1250 m.

Oenothera cespitosa Nutt. var. *macroglottis* (Rydb.) Cronquist: 1; CO (5289); oaw-rip; 2350–2400 m.

Oenothera coronopifolia Torr. & A. Gray: 17; CO (7459), HA (6582), MO (8815), SM (8870), UN (881); ppw, mog-rip, fog, pmg, rip, rds, mxs, rip-pmg; 1250–2600 m.

Oenothera elata Kunth var. *hirsutissima* (A. Gray ex S. Watson) Cronquist: 7; CO (7543), HA (8423), MO (8491), UN (2438); mog-lac, rip, ppw, ari; 1450–2300 m.

? *Oenothera. elata* Kunth var. aff. *hirsutissima* (A. Gray ex S. Watson) Cronquist: 1; MO (6382); rip-ppw; 2300–2350 m.

Oenothera engelmannii (Small) Munz: 2; HA (4938), UN (880); pmg, pmg-rip; 1300–1400 m.

Oenothera flava (A. Nelson) Garrett: 5; HA (5431), MO (3146), SM (3348), UN (5184); mxs, mxs-lac, rip, pmg, mcw-rip; 1550–2000 m.

Oenothera pallida Lindl. var. *runcinata* (Engelm.) Cronquist: 1; MO (DH-11735); 1600–1650 m.

Oenothera villosa Thunb. var. *strigosa* (Rydb.) Dorn: 3; CO (6641), UN (8034); rip, mog-rip, oaw; 1550–2600 m.

? *Oenothera. villosa* Thunb. var. aff *strigosa* (Rydb.) Dorn: 1; MO (7845); pmg; 1550–1600 m.

Oenothera villosa (Kunth) P. H. Raven var. *villosa*: 1; MO (8825); rip; 2450–2500 m.

Orchidaceae

Corallorhiza sp.: 1; MO (4766); lac; 2400–2450 m.

Corallorhiza striata Lindl.: 2; CO (2661); rip-ppw, mog-lac; 1800–2300 m.

Platanthera purpurascens (Rydb.) Sheviak & W. F. Jenn.: 1; CO (9042); mog-rip; 2550–2600 m.

Orobanchaceae

Castilleja integra A. Gray var. *integra*: 32; CO (4689), HA (4432), MO (4566), SM (7107), UN (3946); rip-ppw, mog-rip, fog, pmg-pjw, mxs, rip, pjw-row, mxs-lac, rds, rip-row, ppw, lac, oaw, ari, pjw, rip-pmg, rip-oaw, pmg; 1350–2600 m.

Castilleja miniata Douglas ex Hook. var. *miniata*: 1; CO (6690); rip; 2400–2450 m.

Castilleja sessiliflora Pursh: 5; HA (4590), QU (9806), SM (4525); pmg-lac, pjw, lac, pmg, rip; 1100–1900 m.

Orobanche ludoviciana Nutt. var. *multiflora* (Nutt.) Beck: 7; HA (8240), SM (6059), UN (993); pmg, mxs, rip-pmg; 1300–1650 m.

Orthocarpus luteus Nutt.: 2; CO (9073), UN (8002); mog-rip, oaw; 1550–2600 m.

Pedicularis procera A. Gray: 5; CO (5273), MO (8803); mcw-rip, mog-lac, mog-rip, rip; 2250–2600 m.

Oxalidaceae

Oxalis corniculata L.: 4; SM (6143), UN (3243); rip, rip-pmg, ari; 1400–2000 m.

Oxalis violacea L.: 1; CO (6629); rip; 2400–2450 m.

Papaveraceae

Argemone hispida A. Gray: 11; CO (5114), MO (7838), UN (692); rds, fog, ppw, pmg, oaw, row; 1450–2200 m.

Argemone polyanthemos (Fedde) G. B. Ownbey: 7; UN (5569); pmg-rip, pmg; 1350–1600 m.

Argemone squarrosa Greene var. *squarrosa*: 6; UN (6953); pmg, pmg-rip; 1400–1650 m. A number of collections were made from lava substrates.

Corydalis aurea Willd. var. *aurea*: 6; CO (5294), MO (3362); UN (NS-9410); oaw-rip, mcw-rip, mcw, rip, oaw, pmg; 1400–2500 m.

? *Corydalis aurea* Willd. var. aff. *aurea*: 1; MO (8510); rip; 1550–1600 m.

Corydalis aurea Willd. var. *occidentalis* Engelm. ex A. Gray: 10; CO (4675), MO (3141), QU (NS-9740), SM (3832), UN (4156); 1150–1850 m.

! *Eschscholzia californica* Cham. subsp. *californica*: 1; SM (NS-9626); pmg; 1250–1300 m.

Phrymaceae

Mimulus glabratus Kunth var. *jamesii* (Torr. & A. Gray ex Benth.) A. Gray: 1; UN (5193); mcw-rip; 2100–2200 m.

Plantaginaceae

* *Collinsia* aff. *parviflora* Lindl.: 1; CO (9031 B); lac; 1800–1850 m.

Besseya plantaginea (E. James) Rydb.: 2; MO (4736); mog-rip, rip-ppw; 2300–2400 m. [=*Synthris plantagenia* (E. James) Benth.]

!! *Linaria dalmatica* (L.) Mill. subsp. *dalmatica*: 1; CO (9057); mog-rip; 2550–2600 m.

Nuttallanthus texanus (Scheele) D.A. Sutton: 4; SM (6286), UN (3228); rip-pmg, pjw, ari; 1550–2250 m. [=*Linaria canadensis* (L.) Dum. Cours. var. *texana* (Scheele) Pennell]

Penstemon albidus Nutt.: 1; UN (3493); pmg; 1500–1550 m.

Penstemon ambiguus Torr.: 16; HA (5061), SM (4842), UN (5554); pmg, rds, pmg-rip; 1300–1600 m.

Penstemon angustifolius Nutt. ex Pursh var. *caudatus* (A. Heller) Rydb.: 1; CO (5115); rds; 1850–1900 m.

~ *Penstemon auriberbis* Pennell: 10; HA (4427), UN (4164); pmg-pjw, pmg, pmg-rip, riw, rds; 1300–1650 m.

Penstemon barbatus (Cav.) Roth var. *torreyi* (Benth.) A. Gray: 13; CO (6647), HA (6561), MO (7803), SM (8898), UN (7964); rip, rip-ppw, mog-lac, rds, pjw-row, ppw-pjw, pmg, mxs, rip-pmg, oaw; 1550–2450 m.

Penstemon buckleyi Pennell: 3; UN (3193); pmg, rds; 1500–2000 m.

Penstemon fendleri A. Gray: 2; HA (4598), SM (4527); pmg-lac, lac; 1800–1850 m.

Penstemon glaber Pursh var. *brandegeei* (Porter) Freeman: 3; CO (7501), UN (8022); mog-lac, rds, oaw; 1550–2500 m.

Penstemon gracilis Nutt.: 1; CO (7531); mog-lac; 2250–2300 m.

Penstemon inflatus Crosswhite: 1; CO (6633); rip; 2400–2450 m.

Penstemon jamesii Benth: 28; CO (5484), HA (5900), MO (4564), QU (4463), SM (6159), UN (6954); rds, fog, ppw, pmg, ari, mxs, rip, rip-pmg, pjw-pmg; 1150–2200 m.

Penstemon rydbergii A. Nelson var. *rydbergii*: 2; CO (6511), UN (4210); ppw, rip-oaw; 1900–2400 m.

Penstemon secundiflorus Benth.: 19; HA (765), QU (NS-9760), SM (4873), UN (9424); pmg, rip, rds, mxs, pjw, rip-pmg, pjw-mxs, pjw-pmg, rsl-pmg; 1150–1850 m.

Penstemon strictiformis Rydb.: 2; HA (5104), UN (5529); rds; 1350–2000 m.

Penstemon strictus Benth.: 2; CO (7444); ppw, mog-rip; 2300–2600 m.

Penstemon virgatus Gray var. *virgatus*: 1; CO (9094); mog-rip; 2550–2600 m.

Plantago eriopoda Torr.: 2; SM (6110), UN (5619); rip, pmg-rip; 1400–2000 m.

! *Plantago lanceolata* L.: 9; CO (4682), HA (5450), MO (8576), SM (7117); rip-ppw, rip, rds, ari; 1550–2350 m.

! *Plantago major* L. var. *major*: 2; MO (8526); rip, pmg; 1550–1600 m.

Plantago patagonica Jacq.: 47; CO (5121), HA (5845), MO (4541), QU (6992) SM (6063), UN (5556); fog, pmg-lac, pmg, rds, rip, rip-pmg, pjw, ari, mxs, ari, pjw, riw, oaw, rip-oaw, pjw-pmg, rsl-pmg, ppw; 1100–2300 m.

Veronica americana Schwein. ex Benth.: 1; CO (7558); mog-lac; 2250–2300 m.

Veronica catenata Pennell: 12; HA (4974), MO (8796), SM (3846), UN (5665); rip, rip-pmg, riw, mcw-rip, oaw, ari; 1300–2500 m.

Veronica peregrina L. var. *xalapensis* (Kunth) H. St. John & F. W. Warren: 6; HA (3325), UN (5815); 1300–1800 m.

! *Veronica serpyllifolia* L. var. *humifusa* (Dickson) Vahl: 1; CO (3408); pmg-lac; 1800–1850 m.

Poaceae

Achnatherum hymenoides (Roem. & Schult.) Barkworth: 40; CO (6779), HA (5389), MO (7856), SM (4534), UN (2882); rds, fog, ppw, mxs, rip, pmg, mxs, lac, ari, pmg-rip, oaw, pjw-mxs; 1250–2050 m. [=*Oryzopsis hymenoides* (Roem. & Schult.] Ricker ex Piper]

Achnatherum robustum (Vasey) Barkworth: 10; CO (8744), SM (7130), UN (1804); rds, mog-rip, ari, fog-ari, oaw, pmg; 1550–2600 m.

!! *Aegilops cylindrica* Host: 6; CO (5500), MO (6225), SM (4539), UN (5534); rds, ppw, lac, pmg-rip, oaw; 1400–2200 m.

Agropyron triticeum Gaertn.: 1; SM (NS-9846); rip; 1800–1850 m. [=*Eremopyron triteceum* (Gaertn.) Nevski]

Agrostis exarata Trin.: 5; CO (7954), HA (8484), SM (8883), UN (7314); rip, mog-rip, rip, mxs, rip-pmg; 1450–2600 m.

Agrostis scabra Willd.: 2; CO (7946); rip, mog-lac; 1250–1600 m.

! *Agrostis stolonifera* L.: 11; CO (7950), HA (7255), MO (8865), SM (8886); rip, mog-lac, rds, ppw, mog-rip, rip-pmg, pmg, mxs; 1350–2500 m.

Alopecurus aequalis Sobol. var. *aequalis*: 2; CO (7603), MO (8861); mog-lac, rip; 2250–2500 m.

Andropogon gerardii Vitman: 7; HA (7789), MO (8551), QU (2719), UN (7320); pjw, rip, rds, oaw, rip-pmg, pmg, rip-row; 1300–1800 m.

Andropogon hallii Hack.: 12; HA (465), MO (8867), UN (7669); pmg, ppw-pjw, rip, rip-pmg, row, rds; 1300–2500 m.

Aristida adscensionis L.: 8; UN (2036); pmg-rsl, rip-pmg, rds, pmg, rip-row; 1300–1750 m.

Aristida divaricata Humb. & Bonpl. ex Willd.: 1; HA (8374); rip; 1300–1350 m.

Aristida havardii Vasey: 11; UN (2043); pmg-rsl, pmg, rds, rip; 1350–1750 m.

Aristida purpurea Nutt. var. *longiseta* (Steud.) Vasey: 86; CO (5510), HA (5853), MO (7855), QU (7013), SM (8216), UN (6919); rds, pmg, rip-pmg, rip, pal, pjw, pjw-row, mxs, fog-ari, riw, pmg-pjw, row, rsl, pmg-rsl, ppw; 1150–2200 m.

Aristida purpurea Nutt. var. *purpurea*: 29; CO (6777), HA (5380), QU (2728), SM (6007), UN (6839); rds, mxs, pmg, pmg-pjw, ari, pjw, oaw, pmg-rip, rip-row; 1300–1850 m.

Aristida purpurea Nutt. var. *wrightii* (Nash) Allred: 6; HA (6574), SM (6109); rip, pmg, mxs; 1300–1800 m.

! *Avena fatua* L.: 1; UN (1672), rds; 1650–1700 m.

Blepharoneuron tricholepis (Torr.) Nash: 2; CO (9132); mog-rip, rds; 2300–2600 m.

Bothriochloa barbinodis (Lag.) Herter: 2; SM (7028), UN (2555); 1200–1400 m.

! *Bothriochloa ischaemum* (L.) Keng var. *songarica* (Rubr. ex Fisch. & C. A. Mey.) Celarier & Harlan: 16; HA (8652), QU (2726), UN (2039); pmg, rds, pmg-rip, pmg-rsl, rsl, rip-row, rip; 1150–1850 m.

Bothriochloa laguroides (DC) Herter subsp. *torreyana* (Steudel) Allred & Gould: 49; HA (6617), MO (8540), QU (7011), SM (8144), UN (7667); rip, pmg, pjw, rip-pmg; rip, rds, mxs, ari, pmg-rsl, pmg-pjw, row; 1150–2000 m. Specimens were identified initally as *B. saccharoides*.

Bothriochloa springfieldii (Gould) Parodi: 6; HA (3109), SM (8159), UN (1933); mxs, rip-pmg, rds, rsl, rip-row; 1350–1550 m.

Bouteloua curtipendula (Michx.) Torr. var. *caespitosa* Gould & Kapadia: 5; QU (2718), SM (8885), UN (2037); rds, mxs, pmg-rsl, pmg; 1300–2000 m.

Bouteloua curtipendula (Michx.) Torr. var. *curtipendula*: 62;

HA (7781), MO (8544), SM (8967), UN (7318); pjw, pmg, ppw-pjw, pjw-row, mxs, rip, rds, fog-ari, ari, pmg-rip, oaw, pmg-pjw, row, fog, rsl, rip-row; 1150–2050 m.

Bouteloua dactyloides (Nutt.) J.T. Columbus: 68; CO (4268), HA (5833), MO (2266), SM (8134), UN (6891); lac, pmg, rds, rip, mxs, rip-pmg, pjw, riw, pmg-pjw, rsl, fog, pmg-rsl, rip-row; 1150–2250 m.

Bouteloua eriopoda (Torr.) Torr.: 4; HA (3102), MO (DH-12185), SM (8118 A); mxs, pmg-rip; 1400–1650 m.

Bouteloua gracilis (Kunth) Lag.: 78; CO (9018), HA (7782), MO (8863), QU (2715), SM (8970), UN (7310); lac, mog-rip, rds, pjw, pmg, rip, rip-pmg, pjw-row, mxs, fog-ari, oaw, row, fog, pmg-pjw, pmg-rsl; 1300–2500 m.

Bouteloua hirsuta Lag. var. *hirsuta*: 25; HA (8478), MO (DH-12057), SM (8160), UN (2123); rip, pmg, rip-pmg, pjw, mxs, rds, pmg-pjw, rsl, rip-row; 1150–1900 m.

Bromus anomalus Rupr. ex E. Fourn.: 3; CO (8748), HA (562); rds, mog-rip, ppw-pjw; 1700–2600 m.

! *Bromus catharticus* Vahl: 22; CO (4629), HA (5887), MO (8856), QU (NS-9801), SM (2341); rds, pmg, mog-rip, mxs, pjw, mxs-lac, rip, oaw, pjw; 1100–2600 m.

Bromus ciliatus L.: 4; CO (7610), HA (NS-9492); mog-lac, rip, rds; 1550–2350 m.

! *Bromus inermis* Leyss. var. *inermis*: 33; CO (5131), HA (4620), MO (8866), SM (4538), UN (1742); rds, rip, rip-ppw, ppw, ari, fog, pmg-lac, pjw-row, lac, fog-ari, pmg; 1550–2500 m.

! *Bromus japonicus* Thunb. ex Murray: 41; CO (5362), HA (4993), MO (490), QU (NS-9830) SM (2342), UN (5224); lac, rds, ari, ppw, mog-lac, rip, rip-pmg, riw, oaw, rsl-pmg, rip-row; 1350–2350 m.

Bromus lanatipes (Shear) Rydb.: 9; CO (6689), HA (4388), MO (4574), SM (8888), UN (6929); rip, rds, rip-pmg, mxs, riw, pmg; 1350–2500 m.

! *Bromus tectorum* L.: 42; CO (5316), HA (5415), MO (6422), QU (NS-9709), SM (5961), UN (263); rip-ppw, oaw-rip, pmg, ppw, mxs, rds, mog-rip, oaw, rip-pmg, pjw, mcw-rip, riw, ari, pjw-ppw; 1150–2400 m.

Calamagrostis stricta (Timm) Koeler subsp. *inexpansa* (A. Gray) C.W. Greene: 1; CO (9134); mog-rip; 2550–2600 m.

Cenchrus longispinus (Hack.) Fernald: 14; HA (8285), MO (8550), SM (5975), UN (2018); pmg, mxs, rip, ari, pmg-rip, pmg-rsl, rds, rip-row; 1250–1600 m.

Cenchrus spinifex Cav.: 1; QU (2714); rds; 1300–1350 m.

Chloris verticillata Nutt.: 22; HA (5044), QU (2712), SM (8976), UN (1200); pmg, rds, mxs, fog-ari, pmg-rip, rsl, pmg-rsl, rds, rip, rip-row, rsl-riw; 1250–2050 m.

! *Cynodon dactylon* (L.) Pers. var. *dactylon*: 2; SM (6097); mxs; 1250–1350 m.

! *Dactylis glomerata* L.: 20; CO (5322), MO (4755), SM (7129), UN (3965); oaw-rip, rip, rip-ppw, rds, ppw, mog-rip, lac, ari, rip-pmg, pmg, pjw, pjw-oaw; 1200–2450 m.

Danthonia parryi Scribn.: 2; CO (7606); mog-lac, ppw; 2250–2350 m.

Danthonia spicata (L.) P. Beauv. ex Roem. & Schult.: CO (7461); ppw; 2250–2300 m.

Dichanthelium oligosanthes (Schult.) Gould var. *scribnerianum* (Nash) Gould: 3; HA (5446), SM (6154); rip, rip-pmg; 1700–2250 m.

Digitaria californica (Benth.) Henrard: 1; HA (9475); rsl-riw; 1550–1600 m.

Distichlis spicata (L.) Greene var. *stricta* (Torr.) Scribn.: 4; HA (4391), MO (7854); rip-pmg, pal, pmg; 1350–1600 m.

! *Echinochloa crus-pavonis* (Kunth) J.A. Schultes var. *crus-pavonis*: 1; UN (257); pmg; 1450–1500 m. The specimen should be re-examined given the infrequency of the variety in the North America.

! *Echinochloa crus-pavonis* (Kunth) Schult. var. *macra* (Wiegand) Gould: 8; QU (4503), SM (5965), UN (2665); ari, rds, rip-pmg, pmg, pmg-rsl, rip-row; 1150–1550 m.

Echinochloa muricata (P. Beauv.) Fernald var. *microstachya* Wiegand: 10; HA (8379), SM (8167), UN (7665); rip, rip-pmg, pjw, pmg, fog-ari, mxs, oaw; 1300–2050 m.

Echinochloa muricata (Beauv.) Fern. var. *muricata*: 1; UN (7405); ari; 1550–1600 m.

Elymus canadensis L.: 49; CO (7948), HA (6623), MO (7851), SM (7131), UN (327); rip, mog-lac, ari, rds, ppw, mxs, rip, pmg, ppw-pjw, pmg, pmg-rip, riw, oaw, rds, oaw, pmg-rsl, rip-row; 1300–2500 m.

! *Elymus elongatus* (Host) Runem. var. *elongatus*: 1; SM (8974); fog-ari; 2000–2050 m. [=*Leymus racemosus* (Lam.) Tzev.]

Elymus elymoides (Raf.) Swezey var. *brevifolius* (J. G. Sm.) Dorn: 127; CO (5132); HA (4622), MO (8854), QU (4502), SM (4872), UN (5219); rds, lac, ari, mog-lac, mog-rip, rip, fog, pmg-lac, ppw, pmg-pjw, pmg, pmg-rip, pjw, mxs, mxs-lac, oaw, fog-ari, riw, mcw-rip, row, rip-row; rsl-pmg; pjw-ppw; 1150–2600 m.

! *Elymus giganteus* Vahl.: 1; CO (6758); rip; 2150–2200 m. [=*Leymus racemosus* (Lam.) Tzvelev]

Elymus glaucus Buckley var. *glaucus*: 1; UN (8082); oaw; 1550–1600 m.

Elymus lanceolatus (Scribn. & J. G. Sm.) Gould var. *lanceolatus*: 1; UN (8086); oaw; 1550–1600 m.

Elymus smithii (Rydb.) Gould: 74; CO (6774), HA (6618), MO (8858), SM (8981), UN (5526); rds, ari, mog-lac, mog-rip, ppw, fog, pmg-lac, mxs, rip, pjw, pmg, rip-pmg, pal, fog-ari, riw; 1300–2600 m.

Elymus trachycaulus (Link) Gould ex Shinners var. *trachycaulus*: 18; CO (8740), SM (7027), UN (389); rds, mog-lac, lac, rip, ari, pmg-rip, oaw, rip-pmg, pmg; 1400–2500 m.

! *Eragrostis cilianensis* (All.) Vignolo ex Janch.: 6; SM (8133), UN (2067); pmg-rip, pmg-rsl, rds, rip-row; 1300–1500 m.

Eragrostis curtipedicellata Buckley: 3; CO (5506), SM (6057), UN (7662); rds, mxs, rip-pmg; 1250–1950 m.

! *Eragrostis curvula* (Schrad.) Nees var. *conferta* Stapf.: 1; UN (5595); pmg-rip; 1400–1450 m.

Eragrostis pilosa (L.) P. Beauv. var. *pilosa*: 2; MO (8554), SM (8975); rip, fog-ari; 1550–2050 m. Previously reported in NM but no specimens otherwise known.

Eragrostis secundiflora J. Presl subsp. *oxylepis* (Torr.) S. D. Koch: 9; HA (8336), UN (872); pmg, mxs; 1300–1600 m.

Eragrostis sessilispica Buckley: 4; HA (5098), UN (948); pmg; 1300–1600 m. Specimens collected from sandy soil.

Eragrostis trichodes (Nutt.) A. W. Wood: 5; HA (1352); pjw-row, ppw-pjw, mxs, rip; 1500–1800 m.

Erioneuron pilosum (Buckley) Nash: 39; CO (4630), HA (4337), QU (4504), SM (6105), UN (5706); pmg, fog, mxs, pmg-pjw,

rip, ari, rds, pmg-rip, riw, row, pmg-rsl, rsl-riw, pjw, ppw; 1150–2000 m.

* *Festuca* aff. *arizonica* Vasey: 1; CO (6547); ppw; 2300–2350 m.

Festuca idahoensis Elmer var. *idahoensis*: 1; CO (9133); mog-rip; 2550–2600 m.

Festuca thurberi Vasey: 1; MO (6365); rds; 2250–2300 m.

Glyceria elata (Nash ex Rydb.) M. E. Jones: 2; CO (9143), UN (8090); mog-rip, oaw; 1550–2600 m.

Glyceria grandis S. Watson: 1; MO (8862); rip; 2450–2500 m.

Glyceria striata (Lam.) Hitchcock var. *stricta* (Scribn.) Fernald: 2; UN (5160); mcw-rip, oaw; 1550–1600 m.

Hesperostipa comata (Trin. & Rupr.) Barkworth var. *comata*: 22; CO (7953), HA (4907), QU (3677), UN (1983); rip, pmg, pal, mxs, ari, rds, pmg-rip, riw; 1250–1750 m. [=*Stipa comata* Trin. & Rupr.]

Hesperostipa comata (Trin. & Rupr.) Barkworth var. *intermedia* (Scribn. & Tweedy) Barkworth: 1; UN (4188), pmg, 1450–1500 m.

Hesperostipa neomexicana (Thurb.) Barkworth: 17; CO (5508), HA (4621), MO (6252), QU (NS-9731), SM (3939), UN (4015); rds, pmg, pmg-lac, pmg-pjw, ppw, mxs, pjw, rip-pmg, pjw-mxs, rsl-pmg; 1150–2200 m. [=*Stipa neomexicana* (Thurb. ex Coult.) Scribn.]

Hesperostipa spartea (Trin.) Barkworth: 1; CO (7589); mog-lac; 2250–2300 m. [=*Stipa spartea* Trin.]

Hilaria jamesii (Torr.) Benth.: 50; CO (5344), HA (5048), MO (4575), QU (NS-9713), SM (3938), UN (1229); lac, rds, fog, pmg, rip-pmg, pmg-pjw, rip, mxs, pjw, riw, row, pmg-rsl, rslpjw-mxs; 1150–1850 m.

Hilaria mutica (Buckl.) Benth.: 6; SM (6054), UN (348); mxs, rds, pmg-rip, pmg; 1250–1500 m.

Hordeum jubatum L.: 22; CO (5343), HA (5442), MO (7857), SM (7074), UN (5694); pal, pmg-rip, lac, pmg, rip, mog-lac, ppw, mxs, rip, ari, rip-pmg, riw; 1300–2050 m.

Hordeum pusillum Nutt.: 53; CO (5499), HA (6608), MO (4576), QU (3652), SM (5966), UN (5527); rds, rip, mxs, pmg, pmg-pjw, mxs-lac, oaw, rip-pmg, pjw, riw, rsl-pmg, ppw; 1150–2250 m.

! *Hordeum vulgare* L.: 6; CO (5501), SM (6306), UN (4204); rds, rip-ppw, lac, rip-pmg, pjw; 1450–2250 m.

Koeleria macrantha (Ledeb.) Schult.: 12; CO (7958), SM (8879), UN (8089); rip, ppw, mog-lac, rds, mog-rip, mxs, rip-pmg, oaw; 1550–2600 m.

Leptochloa fusca (L.) Kunth subsp. *fascicularis* (Lam.) N. Snow: 3; SM (8166), UN (7401); mxs, ari, rip-pmg; 1450–1600 m.

Lycurus phleoides Kunth: 8; HA (7790), SM (8884), UN (1036); pjw, ppw-pjw, mxs, pmg, rip-row; 1350–1900 m.

Lycurus setosus (Nutt.) C. Reeder: 10; HA (8650), MO (8552), UN (2825); pmg, ppw-pjw, rip, rip-pmg, rsl, pmg-pjw, rds; 1350–1850 m.

Melica porteri Scribn.: 1; CO (7600); mog-lac; 2250–2300 m.

Munroa squarrosa (Nutt.) Torr.: 1; CO (DH-11765); 1850–1900 m.

Muhlenbergia arenacea (Buckley) Hitchc.: 1; QU (2717 B); rds; 1300–1350 m.

Muhlenbergia arenicola Buckley: 12; HA (7206), QU (2717 A), UN (2881); pmg, rip, rds, rsl, row, pmg-rsl; 1300–1750 m.

Muhlenbergia asperifolia (Nees & Meyen ex Trin.) Parodi: 3; CO (9020), UN (2125); lac, rip-pmg, rip; 1300–1850 m.

* *Muhlenbergia* aff. *asperifolia* (Nees & Meyen ex Trin.) Parodi: 1; CO (9021); lac; 1800–1850 m.

Muhlenbergia montana (Nutt.) Hitchc.: 3; CO (9135), HA (1351); mog-rip, rds, pjw-row; 1750–2600 m.

Muhlenbergia pungens Thurb.: 1; UN (1998 A); rds; 1700–1750 m.

Muhlenbergia repens (J. Presl) Hitchc.: 1; SM (NS-9896); pjw; 1650–1700 m.

Muhlenbergia torreyi (Kunth) Hitchc. ex Bush: 11; HA (750), UN (2821); pmg, pmg-pjw, rip, pmg, rds, fog; 1300–1900 m.

Muhlenbergia wrightii Vasey ex J. M. Coult.: 2; CO (1850), UN (1502); rds, rip-pmg; 1700–2350 m.

Nassella viridula (Trin.) Barkworth: 3; MO (2278), UN (1739); rds, ppw; 1900–2250 m. [=*Stipa viridula* Trin.]

Panicum bulbosum Kunth: 1; SM (8142); pmg-rip; 1400–1450 m.

Panicum capillare L.: 7; CO (9017), HA (DH-12134), MO (2271), SM (8977), UN (2765); lac, rip, rds, fog-ari, pmg; 1450–2050 m.

Panicum hallii Vasey var. *hallii*: 10; HA (6619), UN (2017); rip, rip-pmg, pmg-rsl, rds, row, pmg, rip-row; 1300–1650 m.

Panicum obtusum Kunth: 36; HA (7279), MO (8541), QU (2716), SM (6108), UN (8704); rip-pmg, pjw, rip, pmg, mxs, rip, rds, ari, fog-ari, riw, rsl, row, pmg-rsl, pmg-pjw; 1250–2050 m.

Panicum virgatum L.: 12; CO (7478), HA (8481), MO (7852), UN (6921); ppw, rip, rip-pmg, pmg, rip; 1350–2300 m.

Paspalum setaceum Michx.: 5; HA (8378), UN (1031); rip, pmg, rip-row; 1300–1550 m.

! *Phleum pratense* L.: 9; CO (7588), MO (8855), UN (709); mog-lac, rip, ppw, rds, mog-rip, rds; 1550–2600 m.

Piptatherum micranthum (Trin. & Rupr.) Barkworth: 7; CO (6747), UN (5153); rip-ppw, rip, mog-lac, ppw, mcw-rip, ari; 1550–2350 m. [=*Oryzopsis micrantha* (Trin. & Rupr.) Thurb.

Poa arida Vasey: 2; CO (8722), SM (6166); rds, rip; 1950–2500 m.

Poa bigelovii Vasey & Scribn.: 5; HA (5395), MO (3157 B), SM (3744); mxs, mxs-lac, rip, pjw, rip-pmg; 1550–1950 m.

Poa fendleriana (Steud.) Vasey: 14; CO (5323), MO (4754), SM (3748), UN (3620); oaw-rip, ari, mcw, mog-rip, lac, rip, pjw, mcw-rip, rds, pmg-rip, pjw-oaw, pjw-ppw; 1500–2500 m.

* *Poa* aff. *fendleriana* (Steud.) Vasey: 1; CO (6692); rip; 2400–2450 m.

Poa interior Rydb.: 2; CO (7417), UN (4257); ppw, rip-oaw; 1900–2300 m.

Poa palustris L.: 11; CO (5325), HA (5443), MO (4780), SM (3880), UN (8091); oaw-rip, mcw-rip, mog-lac, rip, rip-pmg, lac, oaw; 1400–2450 m.

! *Poa pratensis* L.: 58; CO (6752), HA (4992), MO (4753), SM (4536), UN (4258); rip-ppw, rip, pmg, rds, oaw-rip, lac, ari, ppw, fog, pmg-lac, pal, mxs, rip-pmg, ppw-pjw, mxs-lac, pjw, mcw-rip, oaw; 1300–2450 m.

* ! *Poa* aff. *pratensis* L.: 1; UN (5161); mcw-rip; 2100–2200 m.

! *Poa trivialis* L.: 1; SM (6182); rip; 1950–2000 m.

Poa wheeleri Vasey: 2; CO (9034), UN (5156); lac, mcw-rip; 1800–1850 m. [=*Poa nervosa* (Hook.) var. *wheeleri* (Vasey) C. L. Hitchc.]

! *Polypogon monspeliensis* (L.) Desf.: 16; CO (9032), HA (5385), MO (7858), QU (7009), UN (6802); lac, mxs, rip, pmg-rip, pmg, rds, riw, ari; 1150–1850 m.

Schedonnardus paniculatus (Nutt.) Trel.: 19; CO (7415), HA (7787), SM (6101), UN (1992); ppw, rip-pmg, pjw, pmg, mxs, fog-ari, oaw, pmg-rsl, rds; 1300–2300 m.

! *Schedonorus arundinacea* (Schreb.) Dumort.: 10; CO (4631), MO (6224), SM (4806), UN (3985); oaw, pmg, rds, rip-ppw, ppw, pjw, rip-pmg, rip-oaw, pjw-oaw; 1650–2350 m. [=*Festuca arundinacea* Schreb.]

Schizachyrium scoparium (Michx.) Nash var. *scoparium*: 18; CO (7479), HA (6620), MO (8558), SM (8880), UN (1997); ppw, mog-rip, rip, pmg, mxs, rip-pmg, pmg-pjw, rds, rip-row; 1300–2300 m.

Setaria leucopila (Scribn. & Merr.) K. Schum.: 13; HA (6599), QU (7010), SM (8138), UN (2558); rip, mxs, rds, mxs, pmg-rip, pmg, rip-row, rsl-riw; 1150–1600 m.

! *Setaria viridis* (L.) P. Beauv.: 12; CO (9023), QU (2723), SM (8971), UN (2878); lac, ari, ppw, rds, fog-ari, oaw, rip-pmg, pmg; 1300–2050 m.

Sorghastrum nutans (L.) Nash: 7; MO (DH-12083), SM (8882), UN (2464); mxs, rip-pmg, pmg, rip; 1300–1900 m.

! *Sorghum halepense* (L.) Pers.: 7; HA (8475), QU (7014), SM (7030); UN (3031); rip, pmg, rds, pmg-rip; 1150–1500 m.

Sphenopholis obtusata (Michx.) Scribn. var. *major* (Torr.) K. S. Erdm.: 3; HA (4987), UN (5676); rip, riw, pmg-rip; 1300–1450 m. Further study may reveal these specimens as *S. intermedia* (Rydb.) Rybd.

Sphenopholis obtusata (Michx.) Scribn. var. *obtusata*: 5; CO (7163), HA (6622), MO (8557), UN (5767); ari, rip, riw; 1400–2000 m.

Sporobolus airoides (Torr.) Torr.: 19; CO (6773), HA (4994), MO (2274), SM (8145); UN (294); rds, ppw, ari, rip, pmg, pal, rip-pmg, pjw; 1300–2300 m.

Sporobolus cryptandrus (Torr.) A. Gray: 40; CO (1849), HA (8377), MO (2273), QU (2729), UN (1080); rds, rip, pmg, mxs, fog, row, pmg-rsl, pmg-rip, pmg-pjw, rip-row; 1300–2350 m.

* *Sporobolus* aff. *cryptandrus* (Torr.) A. Gray: 2; HA (8480), UN (2465 B); rip; 1350–1500 m.

Sporobolus giganteus Nash: 3; HA (DH-12066), UN (918); pmg-rip, pmg; 1350–1600 m.

Tridens albescens (Vasey) Wooton & Standl.: 4; HA (7200 B), SM (3829); pmg, pmg-rip; 1350–1450 m.

Trisetum montanum Vasey var. *montanum*: 1; SM (BR-4124); 2600–2700 m.

! *Triticum aestivum* L.: 3; CO (4632), SM (7029), UN (4187); pmg, rds; 1200–1800 m.

Vulpia octoflora (Walter) Rydb.: 45; HA (4989), MO (4542 A), QU (3649), SM (3743), UN (5539); rip, rip-pmg, pmg, pmg-lac, pmg-pjw, pal, mxs, ari, rds, pjw, bdl; 1100–1950 m.

Polemoniaceae

Collomia linearis Nutt.: 1; CO (7565); mog-lac; 2250–2300 m.

Ipomopsis aggregata (Pursh) V. E. Grant subsp. *candida* (Rydb.) V. E. Grant & A. D. Grant: 4; CO (8767), UN (7963); rds, oaw; 1550–2500 m.

Ipomopsis aggregata (Pursh) V. E. Grant subsp. *formosissima* (Greene) Wherry: 6; CO (7458), MO (8802), UN (7976); ppw, rip, mog-rip, mog-lac, oaw; 1550–2500 m.

Ipomopsis laxiflora (J. M. Coult.) V. E. Grant: 17; HA (4956), QU (NS-9710), SM (6089), UN (5783); pmg, rip, rip-pmg, mxs, rds, ari, pmg-pjw, bdl; 1150–1750 m.

Ipomopsis longiflora (Torr.) V. E. Grant subsp. *longiflora*: 2; SM (8874); mxs, rds; 1850–2000 m.

& *Ipomopsis sancti-spiritus* Wilken & Fletcher: Not collected but known from study area in San Miguel county (Tables 10, 11).

Ipomopsis spicata (Nutt.) V. E. Grant subsp. *spicata*: 1; HA (DH-11749); 1850–1900 m.

Phlox nana Nutt.: 12; SM (6125); lac, rip, ari, rds, rip-pmg, pjw, pjw-oaw, pjw-ppw; 1800–2250 m.

Polemonium foliosissimum A. Gray: 1; CO (7502); mog-lac; 2250–2300 m.

Polygalaceae

Polygala alba Nutt. var. *alba*: 27; HA (4307), QU (4471), SM (6004), UN (6844); pmg, ppw, pmg-pjw, ari, rds, pjw, pmg-rip, pmg-rsl; 1150–1750 m.

Polygonaceae

Eriogonum alatum Torr. var. *alatum*: 14; CO (6705), HA (7743), MO (6208), UN (8048); rip-ppw, ppw, rds, rip, fog, pjw, ari, rip-pmg, oaw, pmg; 1450–2500 m.

Eriogonum annuum Nutt.: 23; HA (8265), SM (8199), UN (7627); pmg, rip-pmg; rds; rip-row; 1300–1850 m.

& *Eriogonum aliquantum* Reveal: Not collected but known from study area in Colfax county (Tables 10, 11).

Eriogonum jamesii Benth. var. *jamesii*: 26; CO (7455), HA (7239); MO (8595), SM (8912), UN (1565); ppw, rip, rds, mog-rip, pmg, mxs, ari, pmg-rip, fog, pmg-pjw, rsl, rip-row; 1350–2600 m.

? *Eriogonum jamesii* Benth. var. aff. *jamesii*: 1; UN (7673); rip-pmg; 1450–1500 m.

Eriogonum lachnogynum Torr. ex Benth.: 9; HA (8616), QU (2691), UN (1561); pmg, rds, pmg-pjw, rsl; 1350–1850 m.

Eriogonum lonchophyllum Torr. & A. Gray var. *fendlerianum* (Benth.) Reveal: 1; UN (7966); oaw; 1550–1600 m.

Eriogonum tenellum Torr. var. *tenellum*: 11; HA (7741), QU (4480), SM (8916), UN (5722); pjw, ari, pmg, mxs, riw, pmg-rip, pmg-pjw, rip-row, pjw-pmg; 1150–1900 m.

? *Eriogonum tenellum* Torr. var. aff. *tenellum*: 1; HA (441); ppw-pjw; 1700–1750 m.

! *Fallopia convolvulus* (L.) Á. Löve: 3; MO (8801), UN (1736); rip, rds; 1950–2500 m.

Persicaria amphibia L. var. *emersua* (Michx.) Hickman: 1; HA (786); pal; 1850–1900 m.

Persicaria amphibia L. var. *stipulacea* (Coleman) Hara: 1; UN (7382); rip-pmg.

Persicaria bicornis (Raf.) Nieuwland: 1; HA (DH-12208); ari; 1700 m.

! *Persicaria lapathifolia* (L.) A. Gray: 7; CO (8996), HA (7728), MO (8844), SM (8100), UN (7396); lac, pjw, rip, pmg-rip, ari, oaw; 1400–2500 m.

! *Persicaria maculosa* A. Gray: 1; MO (8600 B); rip; 1550–1600 m.

Polygonum arenastrum Jord. ex Boreau: 4; HA (4976), UN (7301); rip, pmg, rip-pmg; 1300–1550 m.

! *Polygonum aviculare* L.: 1; SM (8111); pmg-rip; 1400–1450 m.

Polygonum erectum L.: 3; HA (7247), UN (2813); rip-pmg, pmg; 1350–1450 m.

Rumex altissimus A. W. Wood: 13; CO (7878), HA (5434), SM (3786), UN (5671); rip, mxs, rip-pmg, riw, pmg, ari; 1300–1600 m.

! *Rumex crispus* L.:12; CO (6651), HA (4986), MO (8602), SM (7062), UN (8700); rip, rip-ppw, ppw-pjw, pmg, rds, ari, riw, oaw; 1300–2450 m.

Rumex hymenosepalus Torr.: 5; HA (4965), QU (9781), SM (3849), UN (5769); rip, rip-pmg, pmg, bdl; 1150–1350 m.

Rumex maritimus L. var. *fueginus* (Phil.) Dusén: 1; UN (7377); ari; 1550–1600 m.

Rumex salicifolius Weinm. var. *triangulivalvis* (Danser) J. C. Hickman: 5; CO (7154), MO (8603), SM (7105), UN (8046); ari, rip; oaw; 1550–2050 m.

! *Rumex stenophyllus* Ledeb.: 6; CO (9036), HA (8351), SM (8924), UN (6805); lac, rip, fog-ari, ari; 1300–2050 m.

* *Rumex* aff. *verticillatus* L.: 1; UN (7374); ari; 1550–1600 m.

Pontederidaceae

Heteranthera limosa (Sw.) Willd.: 1; HA (DH-12205); lac; 1500–1600 m.

Portulacaceae

! *Portulaca oleracea* L.: 1; UN (2189), pmg; 1400–1500 m.

Portulaca pilosa L.: 1; MO (DH 12181), rip; 1500–1600 m.

Phemeranthus parviflorus (Nutt.) Kiger: 7; HA (448), MO (DH-12209), UN (2070); ppw-pjw, mxs, rip, rip-pmg, pmg; 1300–1750 m. Flora North America (4:493) adopts a broader species concept, which we follow here, but specimens from New Mexico now are often treated as *P. confertiflorus* (Greene) Hershkovitz.

Potamogetonaceae

Potamogeton foliosus Raf. var. *foliosus*: 1; HA (DH-12054); 1500–1600 m.

Potamogeton nodosus Poir: 1; UN (7389), ari; 1550–1600 m.

Primulaceae

Androsace occidentalis Pursh: 3; CO (5244), MO (3358); mcw-rip, mcw, rip; 2250–2500 m.

Androsace septentrionalis L.: 4; CO (5299), SM (6130); rip, oaw-rip, rip-ppw; 1800–2450 m.

Ranunculaceae

Aconitum columbianum Nutt. var. *columbianum*: 1; CO (9052); mog-rip; 2550–2600 m.

Anemone canadensis L.: 1; MO (6396); rip-ppw; 2300–2350 m.

Anemone cylindrica A. Gray: 3; CO (6737); rip-ppw, mog-lac, ppw; 2250–2350 m.

Anemone patens L. var. *multifida* Pritz.: 4; CO (5254), MO (4742); mcw-rip, mog-rip, lac, pmg; 2250–2500 m.

Aquilegia coerulea E. James var. *coerulea*: 1; CO (7487); mog-lac; 2250–2300 m.

Clematis columbiana (Nutt.) Torr. & A. Gray var. *columbiana*: 4; MO (4746), UN (5137); mog-rip, lac, rip, mcw-rip; 2350–2500 m.

Clematis hirsutissima Pursh var. *hirsutissima*: 2; CO (9300); rds, pmg; 2400–2500 m.

Clematis ligusticifolia Nutt.: 3; CO (7580), SM (7108); mog-lac, rip, ari; 1550–2300 m.

Clematis scottii Porter: 3; CO (5306); oaw-rip, mcw-rip, mog-lac; 2250–2400 m.

! *Consolida ajacis* (L.) Schur: 1; CO (7141); ari; 1950–2000 m.

Delphinium nuttallianum Pritz.: 1; CO (9076); mog-rip; 2550–2300 m.

Delphinium ramosum Rydb.: 3; CO (7539), MO (8846); mog-lac, rip; 2250–2500 m.

& *Delphinium robustum* Rydb.: Not collected but known from study area in Colfax county (Tables 10, 11).

& *Delphinium sapellonis* Tidestrom: Not collected but known from study area in Mora county (Tables 10, 11).

Delphinium virescens Nutt.: 18; HA (5412), QU (NS-9774), SM (4881), UN (5656); pmg, mxs, rip, rds, rip-pmg, riw; 1150–2250 m.

* *Delphinium* aff. *virescens* Nutt.: 1; UN (3576); rip-pmg; 1400–1450 m. Specimen collected on rocky substrate.

Myosurus minimus L.: 1; CO (4269); lac; 1800–1850 m. Specimen collected from alkaline soil.

Ranunculus cymbalaria Pursh: 4; HA (8347), MO (4741), UN (5192); rip, mog-rip, mcw-rip; 1300–2400 m.

Ranunculus gmelinii DC.: 1; UN (5190); mcw-rip; 2100–2200 m. Collected from a basalt substrate.

Ranunculus inamoenus Greene var. *inamoenus*: 6; CO (5313); UN (5178); oaw-rip, mcw, mcw-rip, rip-pmg, oaw; 1400–2450 m.

Ranunculus macounii Britton: 4; CO (7438 A); MO (6418); ppw, mog-rip, rip-ppw; 2250–2400 m.

Ranunculus ranunculinus (Nutt.) Rydb.: 1; MO (4732); mog-rip; 2350–2400 m.

Ranunculus sceleratus L. var. *multifidus* Nutt.: 9; SM (6117), UN (5718); ari, rip, rip-pmg, riw; 1300–2000 m.

! *Ranunculus testiculatus* Crantz: 1; CO (4665); rip-ppw; 1800–1850 m.

Thalictrum fendleri Engelm. ex A. Gray: 10; CO (5308), MO (4748); oaw-rip, rip-ppw, rip, mcw-rip, mog-lac, ppw, mog-rip; 2250–2600 m.

* *Thalictrum* aff. *fendleri* Engelm. ex A. Gray: 1; CO (4693); rip-ppw; 1800–1850 m.

Rhamnaceae

Ceanothus fendleri A. Gray: 1; MO (6380); rip-ppw, 2300–2350 m.

Rosaceae

Agrimonia striata Michx.: 5; CO (6744), MO (8824), UN (8013); rip-ppw, mog-lac, rip, oaw; 1550–2500 m.

Amelanchier alnifolia (Nutt.) Nutt. ex M. Roem. var. *alnifolia*: 1; MO (BR-8275); 2800–2900 m.

Cercocarpus montanus Raf. var. *montanus*: 21; CO (6640), HA (6556), MO (494), SM (NS-9591), UN (3996); rip, rip-ppw, rds, ppw, pjw-row, mog-rip, rip-row, oaw, rsl, mxs, pjw-mxs; 1350–2450 m.

Crataegus erythropoda Ashe: 1; CO (NS-9283); oaw; 1950–2150 m.

Fallugia paradoxa (D. Don) Endl. ex Torr.: 11; CO (6701), HA (5393), MO (7806), SM (5945), UN (1157); rip-ppw, rip, mxs, pmg, rip-row, rds, fog; 1400–2350 m.
Fragaria vesca L.: 1; CO (6660); rip; 2400–2450 m.
Fragaria virginiana Mill.: 3; CO (5259), UN (4219); mcw-rip, rip-oaw, oaw; 1900–2300 m.
Geum aleppicum Jacq.: 2; CO (7886); ppw, rip; 1550–2300 m.
Geum macrophyllum Willd. var. *perincisum* (Rydb.) Raup: 1; CO (6745); rip-ppw; 2300–2350 m.
Holodiscus dumosus (Nutt. ex Hook.) A. Heller var. *dumosus*: 2; CO (6642); rip, mog-lac; 2250–2450 m.
Physocarpus monogynus (Torr.) J. M. Coult.: 3; CO (6680), MO (6379), UN (5139); 2100–2450 m.
Potentilla anserina L.: 1; MO (4740); mog-rip; 2350–2400 m.
Potentilla arguta Pursh var. *convallaria* (Rydb.) T. F. Wolf: 1; CO (7561); mog-lac; 2250–2300 m.
Potentilla concinna Richardson var. *concinna*: 2; CO (3350), MO (3354); mog, rip; 2450–2650 m.
Potentilla fruticosa L.: 1; CO (6686); rip; 2400–2450 m.
Potentilla gracilis Douglas ex Hook. var. *pulcherrima* (Lehm.) Fernald: 4; CO (7485); rip, mog-lac, pmg, oaw; 1950–2450 m.
Potentilla hippiana Lehm. var. *hippiana*: 6; CO (7448), MO (8828); ppw, rip, mog-lac, mog-rip, rds; 1550–2600 m.
Potentilla norvegica L. subsp. *monspeliensis* (L.) Asch. & Graebn.: 5; CO (7150), MO (8562), SM (7049), UN (7373 B); ari, rip, rip-ppw; 1550–2350 m.
Potentilla paradoxa Nutt.: 1; SM (7048); ari; 2000–2050 m.
Potentilla pensylvanica L. var. *pensylvanica*: 3; CO (7883), MO (6353), UN (5181); 1550–2300 m.
Potentilla rivalis Nutt. var. *millegrana* (Engelm. ex Lehm.) S. Watson: 9; HA (5413), MO (6379) SM (3816), UN (5778); mxs, rip, rip-pmg, ari, pjw; 1300–1950 m. Specimens collected from sandy soils.
Potentilla subviscosa Greene: 1; SM (3739); pjw; 1900–1950 m.
Prunus americana Marshall: 5; CO (1833), HA (8312), UN (4238); rds, pmg, rip-oaw, ppw, mcw-rip; 1300–2350 m.
Prunus virginiana L. var. *melanocarpa* (A. Nelson) Sarg.: 14; CO (5291), HA (443), MO (4722), UN (4224); oaw, ppw, rip, rip-ppw, oaw-rip, mog-lac, rds, mcw, ppw-pjw, mog-rip, mcw-rip; 1700–2450 m.
Rosa arkansana Porter var. *arkansana*: 1; UN (4189); rds-riw; 1879 m.
Rosa woodsii Lindl. var. *ultramontana* (S. Watson) Jeps.: 16; CO (6715), HA (5455), MO (8827), SM (3711), UN (1729); rip-ppw, oaw-rip, rip, rds, mog-lac, ppw, mog-rip, pjw, rip-pmg, oaw; 1550–2500 m.
SR ! *Rosa* x *harisonii* Rivers: 1; CO (4651); pmg; 1750–1800 m. According to Kartesz (pers. comm., 2008), the nearest collections of this escaped ornamental are Uintah Co., UT, and Mahaska Co., IA.
Rubus deliciosus Torr.: 2; SM (3733); pjw, rip-pmg; 1900–2250 m.
* *Rubus* aff. *idaeus* L.: 1; SM (BR-3227); 2500–2700 m.
Rubus idaeus L. var. *strigosus* (Michx.) Maximowicz: 1; CO (6683); rip; 2400–2450 m. [=*R. i.* var. *aculeatissimus* Regel & Tiling]
Rubus neomexicanus A. Gray: 3; SM (3706), UN (4208); pjw, mcw-rip, rip-oaw; 1900–1950 m.
* *Rubus* aff. *neomexicanus* A. Gray: 1; SM (3705 B); pjw; 1900–1950 m.
Rubus parviflorus Nutt. var. *parviflorus*: 1; HA (DH-11715); 1750–1800 m.

Rubiaceae

Galium aparine L.: 1; CO (7880), SM (3810); rip, pmg; 1350–1600 m.
Galium boreale L.: 10; CO (7881), SM (BR-6980), MO (6400), UN (5171); rip-ppw, rip, mog-lac, ppw, mcw-rip; 1550–2450 m.
Galium mexicanum Kunth var. *asperrimum* (A. Gray) Higgins & S. L. Welsh: 6; CO (5283), HA (5430); SM (3864); UN (4212); oaw-rip; rip-ppw, mog-lac, mxs, rip-pmg; 1450–2400 m.
Galium triflorum Michx.: 1; SM (BR-4212); 2500–2600 m.
Hedyotis nigricans (Lam.) Fosberg var. *nigricans*: 9; HA (8260), QU (2677), UN (1952); pmg, mxs, rds, rip-pmg, ari; 1300–1750 m.
Houstonia rubra Cav.: 1; SM (NS-9875); pjw; 1600–1650 m.

Ruscaceae

Maianthemum racemosum (L.) Link var. *amplexicaule* (Nutt.) Dorn: 1; CO (7575); mog-lac; 2250–2300 m.
Maianthemum stellatum (L.) Link: 5; CO (4668), MO (4734); rip-ppw, oaw-rip, mcw-rip, mog-rip; 1800–2600 m.
Nolina texana S. Watson: 8; HA (6585), MO (DH-12148), SM (8165); rip, mxs, pjw, rsl-riv, rds; 1450–1650 m. Disagreement persists as to whether this is distinct from *N. greenei* S. Wats. ex Trealease.

Rutaceae

Ptelea trifoliata L.: 5; HA (8393), MO (509), QU (NS-9735); pmg, rip, pjw-row, pjw-mxs; 1150–1800 m.

Salicaceae

* *Populus* aff. *x acuminata* Rydb.; 1; HA (DH-H2006-01); rip; 1675 m.
Populus angustifolia E. James: 1; SM (BR-8670); 2650–2700 m.
Populus deltoides W. Bartram ex Marshall var. *occidentalis* Rydb.: 14; CO (5331), HA (NS-9440), QU (NS-9694), UN (2442); rip, pmg, lac, oaw, ari, rip-pmg, rds; 1300–2000 m. Collections of Hazlett (DH-2006-01 through 04) in Mills Canyon, Harding County, may represent hybridization between *P. deltoides* and *P. angustifolia*.
Populus tremuloides Michx.: 3; CO (6645), UN (4256); rip, mcw-rip, rip-oaw; 1900–2450 m.
Salix amygdaloides Andersson: 10; CO (5266), HA (DH-2006-07), MO (4744), QU (NS-9689), SM (3822), UN (5614); mcw-rip, mog-rip, rip-pmg, riw, rip-oaw, pmg; 1150–2300 m.
* *Salix* aff. *amygdaloides* Andersson: 2; UN (7399); ari; 1550–1600 m.
& *Salix arizonica* Dorn: Not collected but known from study area in Mora county (Tables 10, 11).
Salix bebbiana Sarg.: 1; SM (4156); 2600–2700 m.
Salix exigua Nutt. var. *exigua*: 31; CO (5265), HA (5369), MO (8816), SM (4814), UN (5169); mcw-rip, rip-ppw, mog-lac, mog-rip, rip, pmg-lac, ppw, mxs, ppw-pjw, pmg, ozw, ari, rip-oaw, riw, rds, pmg-rip; 1350–2500 m.

Salix exigua Nutt. var. *pedicellata* (Andersson) Cronquist: 3; HA (6596), UN (6823); rip, riw, ari; 1350–1600 m.

Salix lasiandra Benth. var. *caudata* (Nutt.) Sudw.: 1; HA (NS-9488); rip; 1600–1700 m. [=*S. lucida* Muhl. subsp. *caudata* (Nutt.) E. Murray]

Santalaceae

Arceuthobium vaginatum (Willd.) J. Presl var. *cryptopodium* (Engelm.) Cronquist: 1; MO (4778); lac; 2400–2450 m.

Comandra umbellata (L.) Nutt. var. *pallida* (A. DC.) M. E. Jones: 4; CO (4690), HA (NS-9517), SM (3885), UN (3561); rip-ppw, pjw, rip-pmg, pjw-pmg; 1400–1850 m.

Phoradendron juniperinum Engelm.: 3; SM (4818); mxs, rip; 1750–1900 m.

Sapindaceae

Acer glabrum Torr. var. *glabrum*: 1; CO (6643); rip; 2400–2450 m.

? *Acer* aff. *negundo* L.: 1; MO (DH-12115); 1500–1600 m.

Acer negundo L. var. *interius* (Britton) Sarg.: 1; SM (NS-9848); rip; 1800–1850 m.

Acer negundo L. var. *violaceum* (Kirchn.) Jaeger: 1; HA (8392); rip; 1450–1500 m.

Sapindus saponaria L. var. *drummondii* (Hook. & Arn.) L. D. Benson: 1; HA (DH-11725); 1500–1600 m.

Saururaceae

Anemopsis californica Hook. & Arn.: 1; SM (6294); rip-pmg; 2200–2250 m.

Saxifragaceae

Heuchera parvifolia Nutt. ex Torr. & A. Gray: 4; CO (4686), MO (4763); UN (5150); 1800–2450 m.

Saxifraga bronchialis L. var. *austromontana* (Wiegand) Piper ex G. N. Jones: 1; CO (6637); rip; 2400–2450 m.

Scrophulariaceae

Scrophularia lanceolata Pursh: 1; CO (7491); mog-lac; 2250–2300 m.

! *Verbascum thapsus* L.: 27; CO (6674), HA (7750), MO (8561), SM (7110), UN (7406); rip, rds, ppw, mog-lac, pjw, pmg, fog-ari, ari, pmg-rip, oaw; 1350–2500 m.

Simaroubaceae

! *Ailanthus altissima* (Mill.) Swingle: 1; HA (NS-9457); rsl-riw; 1550–1600 m.

Solanaceae

Calibrachoa parviflora (Juss.) D'Arcy: 1; CO (9033); lac; 1800–1850 m.

Chamaesaracha conioides (Moric.) Britton: 22; HA (4309), QU (2674) SM (3775); UN (5792); pmg, pmg-pjw, rds, mxs, rip-pmg, pjw, pmg-rsl, ppw; 1150–1550 m.

Chamaesaracha coronopus (Dunal) A. Gray: 11; HA (5376), UN (2057); mxs, pmg-pjw, rip-pmg, pmg, rds, pmg-pjw, rip; 1350–1850 m.

! *Datura quercifolia* Kunth: 2; HA (8329), UN (2658); pmg; 1300–1500 m.

! *Datura stramonium* L.: 1; UN (590); pmg; 1400–1450 m.

Lycium pallidum Miers: 2; HA (NS-9526), MO (7833); pmg; 1550–1850 m.

Physalis hederifolia A. Gray: 1; SM (4826); mxs; 1750–1800 m.

Physalis hederifolia A. Gray var. *comata* (Rydb.) Waterf.: 4; HA (5907), UN (7972); pmg, oaw, rip-pmg; 1550–1750 m.

Physalis hederifolia A. Gray var. *fendleri* (A. Gray) Cronquist: 3; HA (7734), UN (2429); rip, pjw, mxs; 1350–1800 m.

* *Physalis* aff. *heterophylla* Nees: 1; UN (5781), rip-pmg; 1300–1350 m.

Physalis hispida (Waterf.) Cronquist: 7; HA (5076), UN (5572); pmg; pmg-rip; 1300–1550 m.

Physalis virginiana Mill.: 7; HA (8389), MO (8519), UN (1732); rip, ari, rds, rip-row; 2350–2000 m.

Quincula lobata (Torr.) Raf.: 24; CO (4267), HA (4366), QU (9791), UN (2211); lac, pmg-pjw, rip-pmg, pmg-lac, mxs, rds, fog, pmg, ppw; 1150–2200 m.

Solanum americanum Mill.: 1; UN (8051); oaw; 1550–1600 m. A reviewer suggests the identify of this specimen is *S. nigrum* L., which if correct means it is introduced.

Solanum elaeagnifolium Cav.: 88; HA (4365), MO (4548), QU (2680), SM (2295), UN (5231); rip-pmg, pmg, mxs, pmg-pjw, rip, pal, pjw, rds, ari, fog-ari, riw, pmg-rsl, rsl-riw; 1150–1900 m.

Solanum rostratum Dunal: 48; HA (8620), QU (2694), SM (8923), UN (7634); pmg, pjw, mxs, rds, fog-ari, riw, pmg-rip, pmg-rsl, pmg-pjw, fog, row; 1300–2050 m.

Tamaricaceae

!! *Tamarix ramosissima* Ledeb.: 32; CO (5357), HA (5423), MO (7794), QU (4505), SM (6028), UN (5775); lac, ari, ppw, rip, mxs, rip-pmg, pmg, ari, rds, riw, rip-row; 1150–2050 m.

Theophrastaceae

Samolus floridanus Kunth: 1; HA (8293 B); pmg; 1300–1350 m.

Typhaceae

Typha angustifolia L.: 10; CO (5363), HA (8383), MO (8587), UN (1912); lac, rip-pmg, rip, ppw-pjw, oaw, rds; 1300–1850 m.

* *Typha* aff. *angustifolia* L.: 2; HA (481), SM (8110); ppw-pjw, pmg-rip; 1400–1750 m.

Typha latifolia L.: 3; MO (8848), SM (7037); rip, fog-ari, ari; 2000–2500 m.

Ulmaceae

!! *Ulmus pumila* L.: 5; MO (7834), SM (7103), UN (3949); pmg, ari, rip; 1250–2050 m.

Urticaceae

Urtica dioica L. var. *procera* (Muhl. ex Willd.) Wedd.: 7; CO (5255), MO (8821), UN (8020); mcw-rip, mog-lac, rip, rip-ppw, oaw, ari; 1550–2500 m.

Verbenaceae

Glandularia bipinnatifida (Nutt.) Nutt. var. *bipinnatifida*: 91; CO (4273), HA (5910), MO (2232), QU (2668), SM (4516), UN (5218); lac, fog, pmg, pmg-lac, mxs, rds, pmg-pjw, rip-pmg, pjw, mxs-lac, rip, ppw, ari, fog-ari, oaw, rsl, row, pjw-oaw; 1150–2200 m.

Glandularia bipinnatifida (Nutt.) Nutt. var. *ciliata* (Benth.) B. L. Turner: 3; SM (7053), UN (4089); ari, rds, pjw; 1600–2050 m.

Phyla cuneifolia (Torr.) Greene: 18; CO (4653), HA (4362), SM

(7111), UN (5660); pmg, ari, rip-pmg, mxs, rip, pjw, riw, pmg-pjw; 1350–2050 m.

! *Phyla nodiflora* (L.) Greene: 2; SM (5974); ari, mxs; 1250–1300 m.

Verbena bracteata Lag. & Rodr.:19; CO (9016), HA (4581), MO (8520), UN (7379); lac, rds, pmg-lac, pjw, rip, pmg, rip, ari, pmg-rip, rip-row; 1300–2500 m.

Verbena macdougalii A. Heller: 7; CO (7915), MO (8837), SM (8958), UN (1781); rip, mog-lac, mog-rip, fog-ari, ari, rds; 1550–2600 m.

Verbena plicata Greene: 2; HA (7724), SM (5918); pjw, rds; 1400–1800 m.

Violaceae

Hybanthus verticillatus (Ortega) Baill.: 1; HA (6563); rip; 1550–1600 m.

Viola canadensis L.: 4; CO (5245); mcw-rip, rip-ppw, oaw-rip, oaw; 1800–2400 m.

Viola nuttallii Pursh: 5; CO (5297), UN (4216); oaw-rip, mcw-rip, mcw, oaw; 1900–2400 m.

Viola pedatifida G. Don: 3; CO (5288); oaw-rip, mcw-rip, mcw; 2250–2450 m.

Vitaceae

Parthenocissus vitacea (Knerr) Hitchc.: 13; CO (4691), HA (7242), MO (8533), SM (6144), UN (5167); rip-ppw, ppw, rip-pmg, ppw-pjw, rip, pmg, oaw, pjw, mcw-rip; 1350–2250 m.

Vitis acerifolia Raf.: 5; HA (528), SM (3705 A), UN (5551); pjw, rip-pmg, rds; 1400–2250 m.

* *Vitis* aff. *acerifolia* Raf.: 1; HA (8473); rip; 1450–1500 m.

Zygophyllaceae

Kallstroemia parviflora Norton: 1; HA (DH-12149); 1500–1600 m.

Krameria lanceolata Torr.: 13; HA (5034), QU (4470), SM (6016), UN (6880); pmg, mxs, ari, pjw, pmg-rip; 1150–1550 m.

! *Tribulus terrestris* L.: 6; HA (8330), SM (8114), UN (1027); pmg, rip; 1300–1550 m.

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